ARCHITECTURAL RECORD

AUGUST 1947 INDUSTRIAL BUILDINGS

Bodyguard FOR A QUEEN OF THE SKYLINE

Skyscrapers belong to the "royal family" of architecture. And, like all royalty, they need protection.

One important "bodyguard" is *HYDRALT**. It provides dependable protection for the steel framework against the constant, deadly attacks of corrosion.

Fact is, Flintkote *Hydralt* Protective Coatings are important to *any* structure. You'll find places for them on all types of metal and masonry. Above grade or below . . . inside or out . . . *Hydralt* does a dependable, thorough job anywhere you need protection against corrosion or resistance to moisture.

Hydralt is easy and economical to use. Depending on the type you need and the job to be done, you can apply it quickly with trowel, brush or spray.

And *Hydralt* is durable. It's asphalt in its most modern form . . . a stable, mineral-colloid emulsion. Hydralt will never flow under heat. It won't crack at low temperatures . . . withstands prolonged exposure.

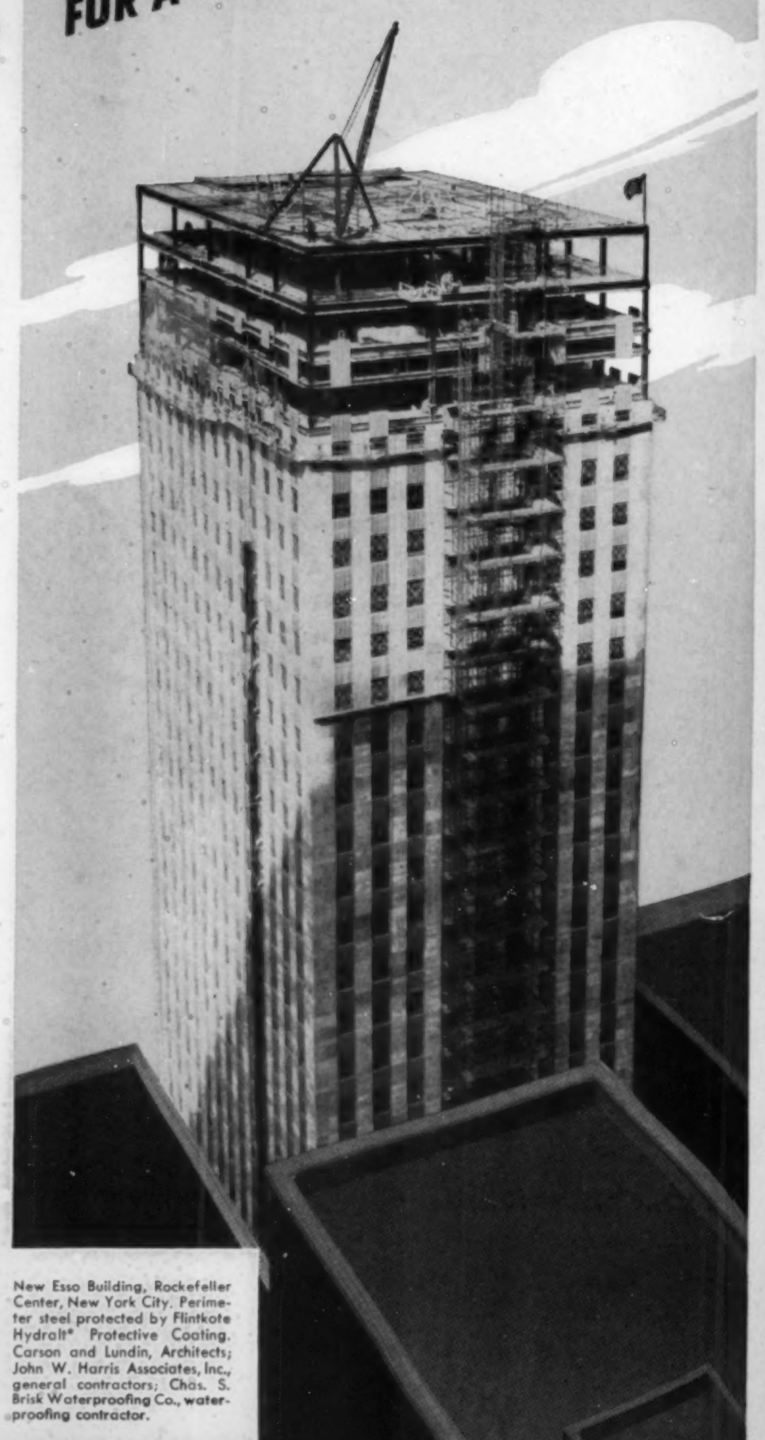
Used properly, *Hydralt* will outlast any other known form of bituminous coating.

See Sweet's for complete specifications and application data, or write us. If you have any unusual requirement, our technical staff will be glad to work with you to solve special problems.

THE FLINTKOTE COMPANY
INDUSTRIAL PRODUCTS DIVISION
30 Rockefeller Plaza, New York 20, N. Y.

ATLANTA • BOSTON • CHICAGO HEIGHTS
DETROIT • LOS ANGELES • NEW ORLEANS
WASHINGTON • TORONTO • MONTREAL

*Reg. U. S. Pat. Off.



New Esso Building, Rockefeller Center, New York City. Perimeter steel protected by Flintkote Hydralt* Protective Coating. Carson and Lundin, Architects; John W. Harris Associates, Inc., general contractors; Chas. S. Brisk Waterproofing Co., waterproofing contractor.

FLINTKOTE
Products for Industry

FLINTKOTE INDUSTRIAL PRODUCTS

ARCHITECTURAL RECORD (Vol. 102, No. 2, August, 1947) is published monthly by F. W. Dodge Corp., 10 Ferry Street, Concord, N. H. with editorial and executive offices at 119 W. 40th St., New York 18, N. Y. $4.50 per year; Foreign, $6.50.

Entered as second-class matter at the Post Office, Concord, N. H., under the Act of March 3, 1879.

ARCHITECTURAL RECORD

F.W.DODGE CORPORATION

Copyright 1947 with allrights reserved F. W. DODGE CORPORATION • Vice-President in charge of Magazine Division, H. Judd Payne • **EDITORS:** Editor-in-Chief, Kenneth Kingsley Stowell, A.I.A.; Managing Editor, Emerson Goble; Senior Associate Editor, Douglas Haskell; Associate Editors, John W. Ragsdale, James S. Graham, Jr.; Associate in South America, Edmund J. Whiting, A.I.A.; News Editor, Florence A van Wyck • **ART DEPARTMENT:** Myron S. Hall, 3rd, Director; Peter Piening, Consultant; Sigman-Ward, Drafting • **CONSULTANTS:** Industry Relations Consultant, Thomas S. Holden; Statistical Consultant, Clyde Shute; Building Economics Consultant, Norbert Brown; Field Research Consultant, Clifford Dunnels, Jr.

Architectural Record (combined with American Architect and Architecture) is published monthly by F. W. Dodge Corporation, 10 Ferry St., Concord, N. H., with Editorial and Executive Offices at 119 West 40th Street, New York, N. Y. Thomas S. Holden, Pres.; Howard J. Barringer, Vice-Pres. and Treas.; Irving W. Hadsell, Vice-Pres.; Chauncey L. Williams, Vice-Pres.; Sanford D. Stockton, Jr., Secy.; Walter F. De Saix, Asst. Treas.; Edwin H. Freed, Asst. Treas. Member Audit Bureau of Circulation and Associated Business Papers, Inc. Architectural Record is indexed in Reader's Guide, Art Index and Industrial Arts Index. Subscription rates: United States and Possessions, Canada, Cuba, Mexico, Central and South America, and Spain, $4.50 the year, $7.50 for two years, $9 for three years; elsewhere, $6.50 the year, $11.50 for two years, $15 for three years. Single copy, $1. Circulation Manager: Marshall T. Ginn. Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage. Other Dodge Services: Real Estate Record & Builders' Guide, Sweet's Files, Home Owners' Catalogs, Dodge Reports & Dodge Statistical Research Service.

VOL. 102 • NO. 2 **August 1947**

PLANNING, TOO, IS FOR PEOPLE 67
An Editorial . . . by Kenneth K. Stowell

THEY PLANNED IT THAT WAY 68
From a Quaint, Provincial Town, Zlin, Czechoslovakia, Developed into a Completely Integrated Industrial City. By Jan Pokorny and Elizabeth Hird

TREE-SET IN TEXAS 76
Home of I. Herschel Fisher, Architect, of Wiltshire and Fisher, Architects, Dallas

A CENTER FOR MOTHERS AND INFANTS 79
Tacubaya, D. F., Mexico. Enrique de la Mora, Architect

BUILDING TYPES STUDY NO. 128 . . . INDUSTRIAL BUILDINGS . . 85

THE ARCHITECT'S OPPORTUNITIES IN FACTORY DESIGN 86
By Roland A. Wank

NEWEST OF JOHNSON & JOHNSON FACTORIES 91
Baby Products Plant, Cranford, N. J. The Ballinger Co., Architects and Engineers; John A. Johnson and Sons, Brooklyn, General Contractors

MODERN PRESCRIPTION FOR INFANT INDUSTRY 96
Semple Machine Shop, Near St. Louis. Harris Armstrong, Architect

ECONOMICAL DESIGN RETAINS AMENITY VALUES 98
B H Aircraft Plant, Islip, L. I. Petroff and Clarkson, Architects; Robert H. Edwards, Associate Architect

DESIGNED FOR DUST AND GERM CONTROL 100
Ampul Building for Winthrop Chemical Co., Rensselaer, N. Y. The Austin Co., Engineers and Builders

ARCHITECTURAL ENGINEERING . . . Technical News and Research . . . 103

INDUSTRIAL PLANTS—A HARVARD RESEARCH PROJECT 103
By Walter F. Bogner

TIME-SAVER STANDARDS 115
Economical Steel Framing Details: Suggestions of American Institute of Steel Construction for Small Industrial Buildings

PRODUCTS . . . for Better Building 122

MANUFACTURERS' LITERATURE 124

THE RECORD REPORTS . . . News from the Field 7

LETTERS FROM RECORD READERS 20

CONSTRUCTION COST INDEXES 27

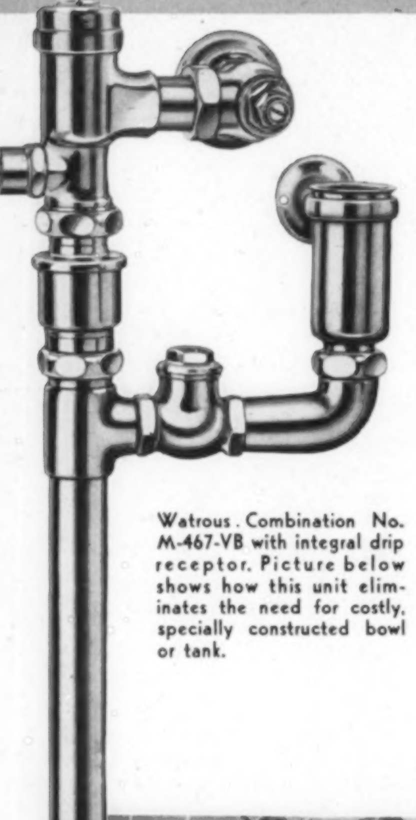
REQUIRED READING 28

EMPLOYMENT OPPORTUNITIES 182

INDEX TO ADVERTISEMENTS 200

NEW development for hospitals

. . . Watrous Flush Valves with Integral Drip Receptor



Watrous Combination No. M-467-VB with integral drip receptor. Picture below shows how this unit eliminates the need for costly, specially constructed bowl or tank.

In hospitals, the use of special fittings to clean bed pans presents the problem of drippings every time the fitting is used.

Here is a simple common-sense answer now offered by Watrous. It consists of a drip receptor mounted as an integral part of the flush valve. The cleaning nozzle is simply placed in this holder after use, and any accumulated drippings flow through a check valve into the flush connection and down into the bowl.

The use of this new Watrous combination eliminates the expense of specially constructed bowls or tanks, and keeps the fittings and hose up out of the way. It is thoroughly protected against any spilling and back-siphonage, and can be arranged for any height above the bowl.

The flush valve itself, of course, offers all those basic Watrous superiorities—self-cleansing by-pass, water-saver adjustment, self-tightening handle packing, single-step-servicing, and, at slight additional cost, screenless silent-action.

Keep this in mind for whatever flush valve needs you may have — Watrous means maximum convenience and economy.

THE IMPERIAL BRASS MANUFACTURING COMPANY
1240 W. Harrison St., Chicago 7, Ill.

For complete information on Watrous Flush Valves see Sweets' Catalog or write for Catalog No. 448-A. Also ask for Bulletin No. 447 giving a summary of "Architects' Views on Flush Valve Applications."

Watrous
FLUSH VALVES

. . . Survey shows 7 out of 8 Architects Prefer Adjustable Flush Valves

Watrous Adjustable Flush Valves

BOTH DIAPHRAGM AND PISTON TYPES

THE RECORD REPORTS

Labor Act May Create New Construction Difficulties Truman Urges Housing Probe • Congress Hits Federal Housing Agencies Hard • Mortgage Credit Is Tighter

In the wake of Uncle Sam's practical abandonment of building controls, new construction uncertainties arise from federal quarters. There's the highly complicated labor law written onto the statute books over the President's veto, which most think will bring trouble. Too, there are moves to probe conditions in the housing industry.

The attitude of employers' groups in the construction industry roughly is that dealing with unions means suffering every kind of imposition, but that fighting with unions is no picnic. The impositions include occasional jurisdictional strikes, outlawed by the Act. They include kinds of on-site labor that, according to the employers, are as pure a distillation of featherbedding as anybody ever could find: limits on the number of bricks to be placed per hour; on-job instead of in-factory threading of pipes; four journeymen plumbers to tote a bathtub from truck to bathroom; 3-in. maximum on width of house-painter brushes, etc. — all these varying endlessly from town to town. They feel that their industry almost was made in anticipation of the new law, which forbids the things they complain of.

New Rulings Possible

But now that the Act has been passed, employer spokesmen still feel that, bad as everything may be, corrections will not be applied without trouble. Some don't even want to see the new law applied. They are hopeful that it will not be, by virtue of older NLRB rulings classifying on-site construction as intrastate. Such rulings came about, bluntly, simply because employer-union relations had long been established and nobody wanted to upset them. Unions did not press cases charging unfair practice; they had their closed shops anyway from away back.

But both sides are far from sure that nobody will upset things now. There may be a jurisdictional strike somewhere. The contractor may press his case before the NLRB. If the strike affects a factory, say, whose products cross state lines, NLRB may invade the construction industry. Then more cases may appear and the Board — or a Court — may reverse the old point of view.

Closed shops are prevalent, and now they are outlawed. As long as NLRB lets construction remain intra-state, nothing will happen. But contractors imagine a non-union-member suing, or going before the Board, to demand a job. This could raise the issue. Everybody so far prefers to keep quiet.

Housing Probe Wanted

President Truman and Senator Taft, while political opponents, agreed on the need of a real estate probe. The President, in a critical message to Congress on the rent control bill, which he reluctantly signed, spoke out bluntly:

"It is intolerable that this (real estate) Lobby," he said, "should be permitted by its brazen operations to block programs so essential to the needs of our citizens. Nothing could be more clearly subversive of representative government. I urge the Congress to make a full investigation of this selfish and short-sighted group."

The Ohio Senator's agreement followed his earlier remarks to a housing rally that misleading propaganda about the Wagner-Ellender-Taft housing bill had been distributed to members of Congress by the home builders and real estate associations.

Meanwhile the House Labor Committee, charging racketeering and monopoly in the housing and construction industry, named a sub-group to inquire into "material and labor costs and questionable practices relating to the economics of housing and construction generally" as well as "numerous complaints of abuses that are paralyzing the building business."

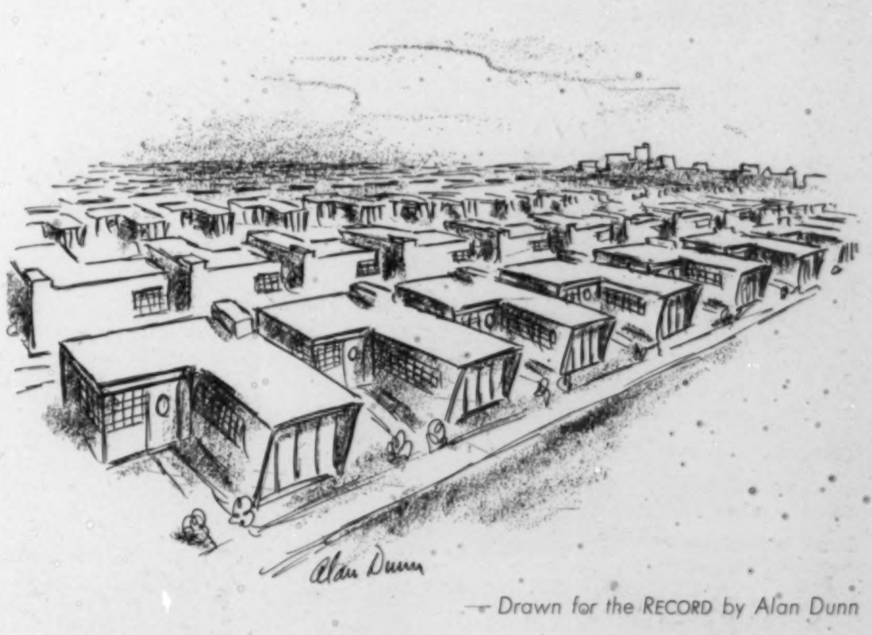
Representative Gwinn of New York, who heads the sub-group (other members include Representatives Owens of Illinois and Lucas of Texas), advises that he will delve into efforts toward collectivism through increased federal housing programs.

Housing Units Hit

Congress in its closing weeks pelted and pared the federal housing activities left and right. In its government corporations bill it whacked the housing agencies by millions of dollars. Regarding the Office of Administrator, the House Appropriations Committee commented that "unless legislative provision is made to authorize and specify (its) duties and functions . . . the fiscal year 1948 is to be the last year of its existence." It spoke of the Housing Expediter's activities even more critically: "The Committee is convinced that the program of trying to expedite the construction of residential housing has not been successful. It is doubtful that the funds expended have expedited construction at all, and more doubtful that the public has received real value for its funds so used." It rained charges on the Federal Public Housing Authority and questioned its policies and methods in disposing of war housing, especially sales to mutual ownership groups.

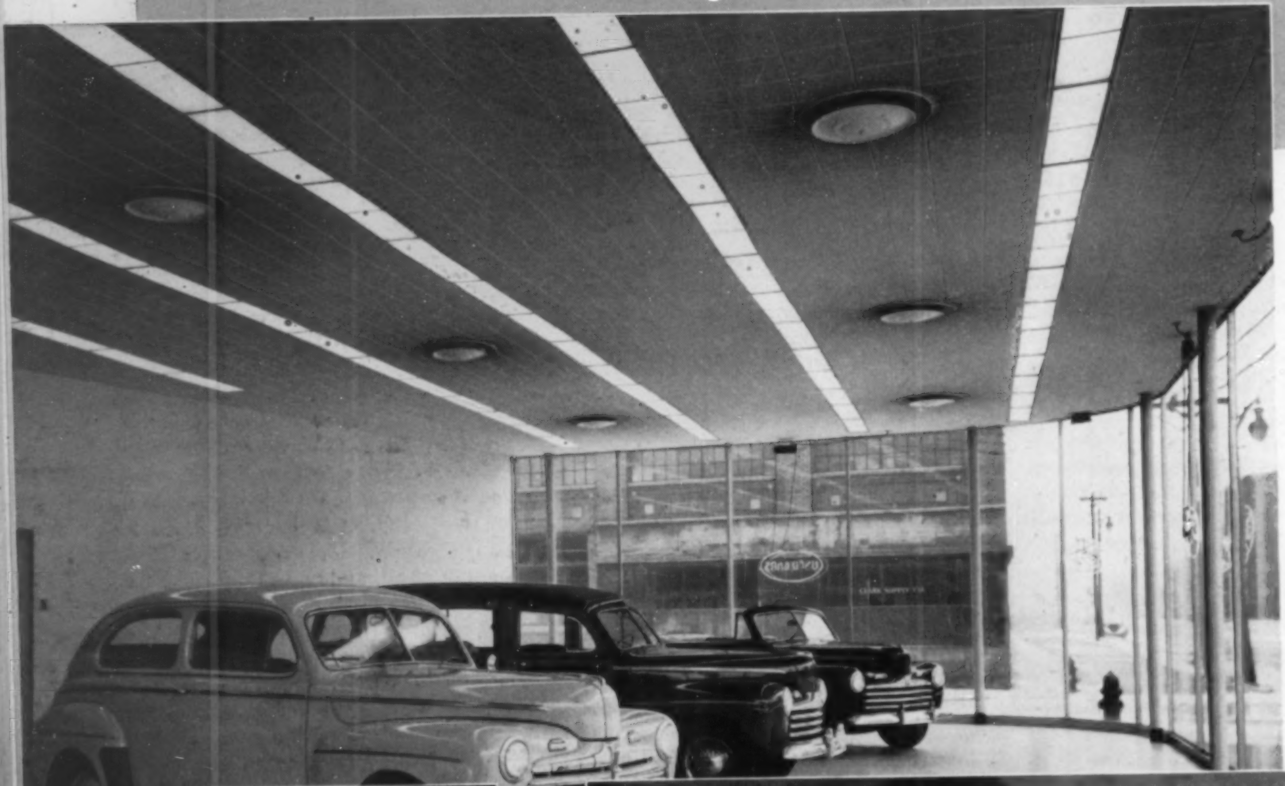
Buried in the government corporation bill report was the recommendation that a Congressional committee re-examine the ratio of reserves maintained against loss contingencies under FHA operations in insuring loans. The suggestion is made because the agency has been operating in a period when real property values were rising and has never been confronted with a period of declining residential prices.

(Continued on page 10)



— *Drawn for the* RECORD *by Alan Dunn*

"LET THERE BE LIGHT"



FORD Sales and Service, Detroit, Michigan

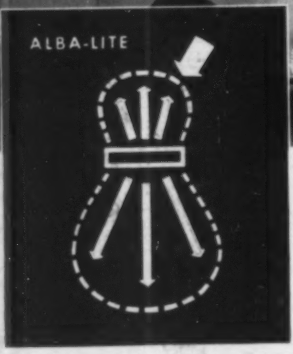
Architect: O'Dell, Hewlett & Lukenbach

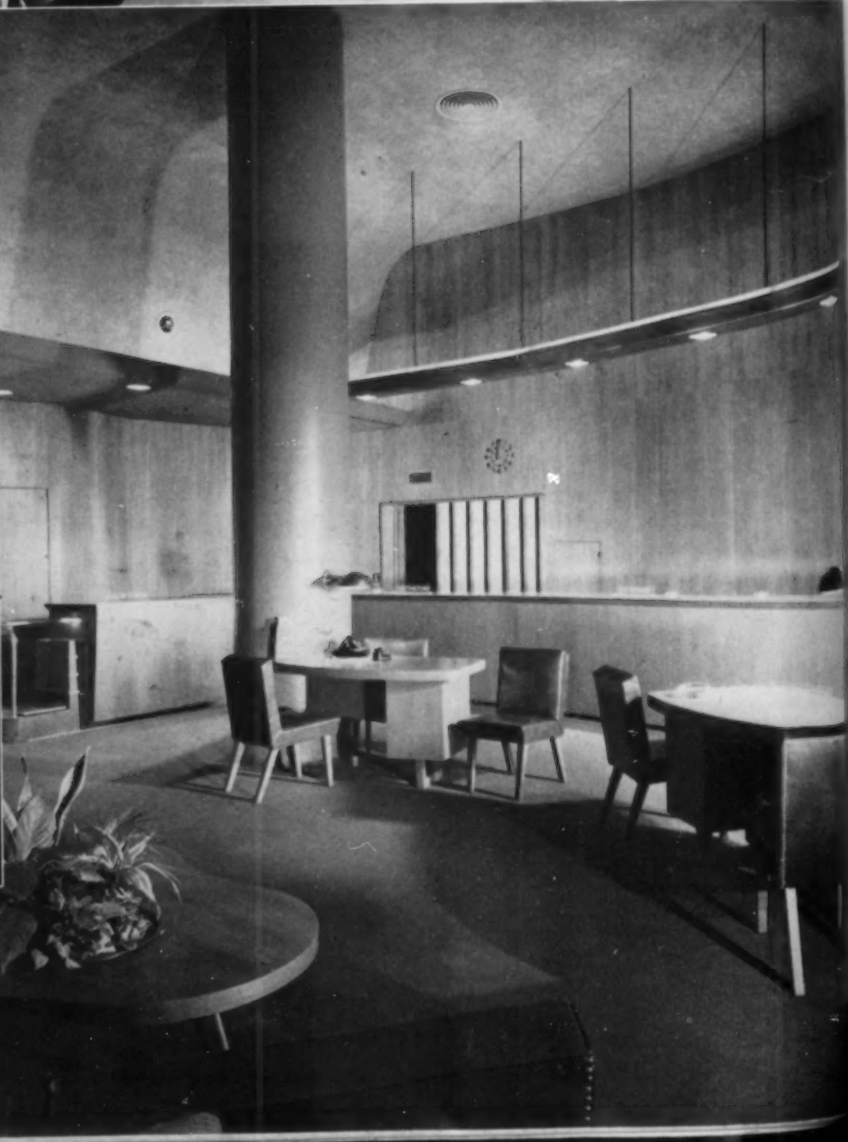
Electrical Contractor: Wayne Electric Co.

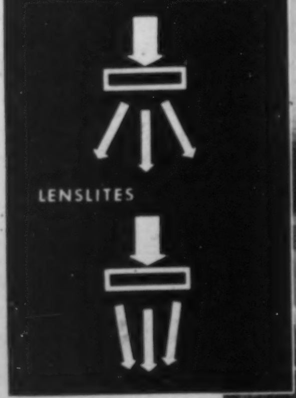
Fixture Manufacturer: Kirlin Company

Corning Lightingware: ALBA-LITE Panels

Foot Candles Delivered: 40 to 55







Western Air Lines, Los Angeles, California

Architect: H. Roy Kelley

Contractor: Golden State Electric Company

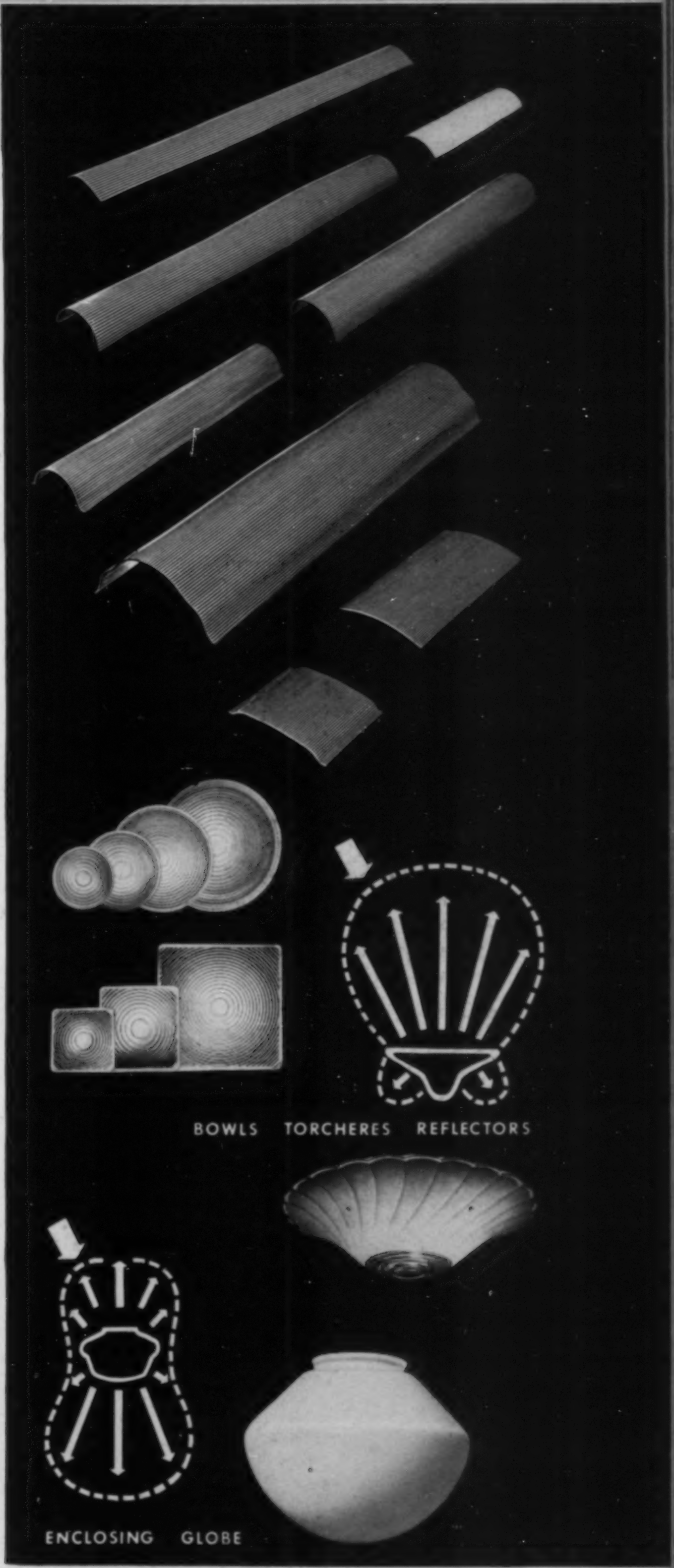
Fixture Manufacturer: Wagner—Woodruff Company

Corning Lightingware: PYREX brand Lenslites

Foot Candles Delivered: 25 to 30

delivered the way you need it!

CORNING ENGINEERED LIGHTINGWARE IS AVAILABLE FOR EVERY LIGHTING NEED



Planning a home, showroom, office building, school, hotel or apartment? If so, "let there be light" . . . delivered the way you need it. Corning lighting experts will gladly assist you in selecting the lightingware that best meets your requirements. Corning products are scientifically made to provide proper diffusion or direction for both fluorescent and incandescent applications.

FLUORESCENT LIGHTINGWARE

ALBA-LITE Lightingware provides high transmission, low reflection. It is a light opal glass available in rolled sheet form and may be bent to specification.

MONA-LITE Lightingware provides low transmission, high reflection. It is a dense opal glass available in rolled sheet form . . . supplied flat to specification.

BALANCED LIGHTING: Used separately or in combination, ALBA-LITE and MONA-LITE provide maximum flexibility in fixture design. Light diffusion is secured through glass composition rather than through surface treatment.

FLUR-O-GUIDE LENS PANELS in a wide range of lengths and widths provide light control with low panel brightness and permit maximum flexibility in fixture design.

INCANDESCENT LIGHTINGWARE

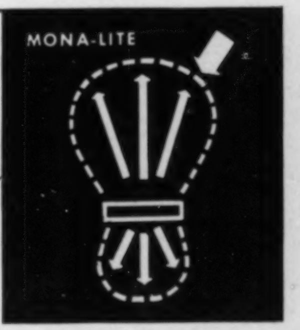
LENSLITES made of PYREX Brand heat-resisting glass are available in many sizes, both round and square, for wide angle or concentrated light beam spread.

MONAX enclosing globes provide efficient, attractive, low-cost illumination on general diffuse lighting applications.

CORNING I.E.S. TYPE reflectors are ideally suited for table, bridge and floor lamps.

RESIDENTIAL LIGHTINGWARE by Corning includes bowls, globes and crystal lamp parts. They will enhance the appearance of any home.

For further information on MONA-LITE, Corning's newest fluorescent lightingware, write today for Bulletin LS-10



CORNING means research in GLASS

PYREX T.M. REG. U.S. PAT. OFF.

CORNING GLASS WORKS • CORNING, N. Y.

SALES OFFICES: NEW YORK • CHICAGO • SAN FRANCISCO

LIGHTINGWARE

TECHNICAL PRODUCTS DIVISION: LIGHTINGWARE • GAUGE GLASSES • GLASS PIPE • SIGNALWARE
LABORATORY GLASSWARE • OPTICAL GLASS • GLASS COMPONENTS

THE RECORD REPORTS

(*Continued from page 7*)

Mortgage Credit Tighter

Washington continues to anticipate a progressively tightening mortgage credit market, a trend which has been apparent for some months. Lending institutions, it is noted, have been adopting increasingly conservative appraisal and lending policies.

FHA expects to do a fair amount of business during the year, hoping to insure a total of about 360,000 dwelling units. This outlook is heightened by the tendency of banks and other lenders to require insurance before making loans.

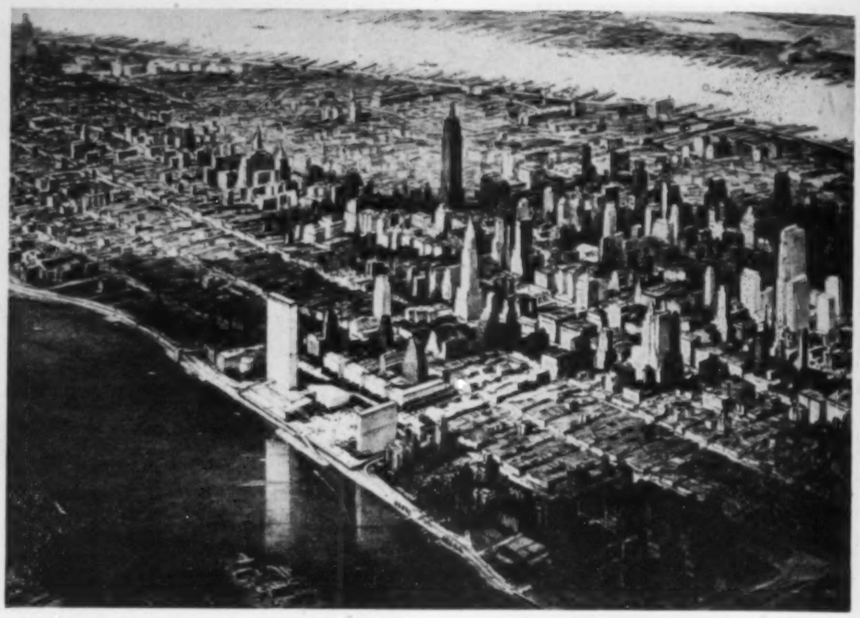
In this connection, remember too, that Congress extended insurance of veterans' housing mortgages for another nine months, until next March 31. Congress also authorized the insurance of short-term loans made by private institutions to finance the manufacture of housing. Currently procedures and regulations are being developed for putting this type of insurance into effect.

Continuance of repair loans for two years also got Congressional clearance and new reserves for the operation were established. And officials, incidentally, counted on an upturn in repair activity during the summer and early fall.

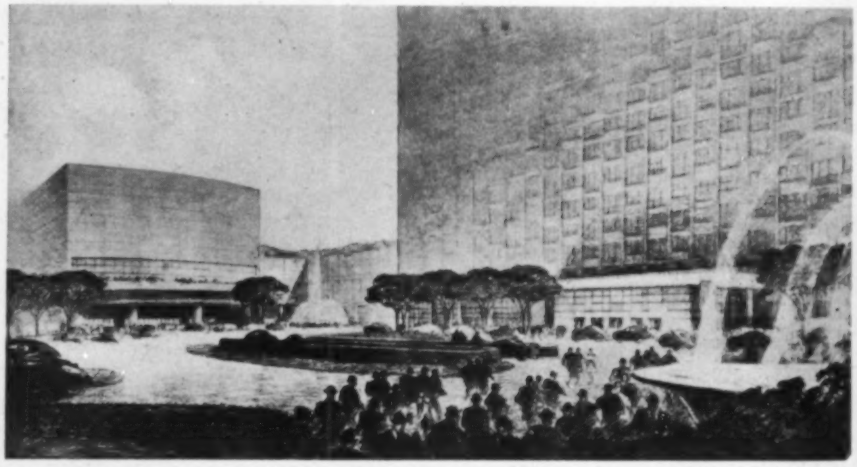
Price Effects Felt

High costs continue to affect construction, even in the case of public works. FWA Chief Fleming reports that state highway departments have not awarded contracts at the rate anticipated because of bid prices exceeding estimates, a development which has resulted in the postwar highway program

(*Continued on page 12*)



With the work of clearing the site for the U.N. Headquarters already under way, further preliminary plans and sketches have been made public. Above, artist's bird's-eye view of the East River site in relation to central Manhattan; drawn by Chester Price. Below, possible treatment of the Plaza, south end of site; rendering by Hugh Ferris



Official United Nations Photo

U.N. planners (l. to r.): Markelius, Sweden; Le Corbusier, France; Bodiansky, France; Liang, China; Harrison, U. S.; Niemeyer, Brazil; Soilleux, Australia; Bassov, U.S.S.R.; Abramowitz, U. S.; Weismann, Yugoslavia; Cormier, Canada; Antoniades, Greece; Nowicki, Poland

FOR PLASTER BASE
DOUBLE DUTY
INSULITE GIVES
Double
FOR THE MONEY!

Here are the facts: Double-duty INSULITE *SEALED* LOK-JOINT LATH performs *two* functions for inside walls—

(1st) *Plaster Base* (2nd) *Insulation*

Two values for the price of one. A distinct advantage, quickly understood and appreciated by your clients. The reasons—You need a plaster base anyway—so why not have one that *insulates* at the same time . . . in addition it provides vapor control. Double for the money! This is smart, modern, progressive construction procedure—functional and economical. Specify double-duty Insulite *Sealed* Lok-Joint Lath.

Refer to Sweet's File,
Architectural Section 10 a/9

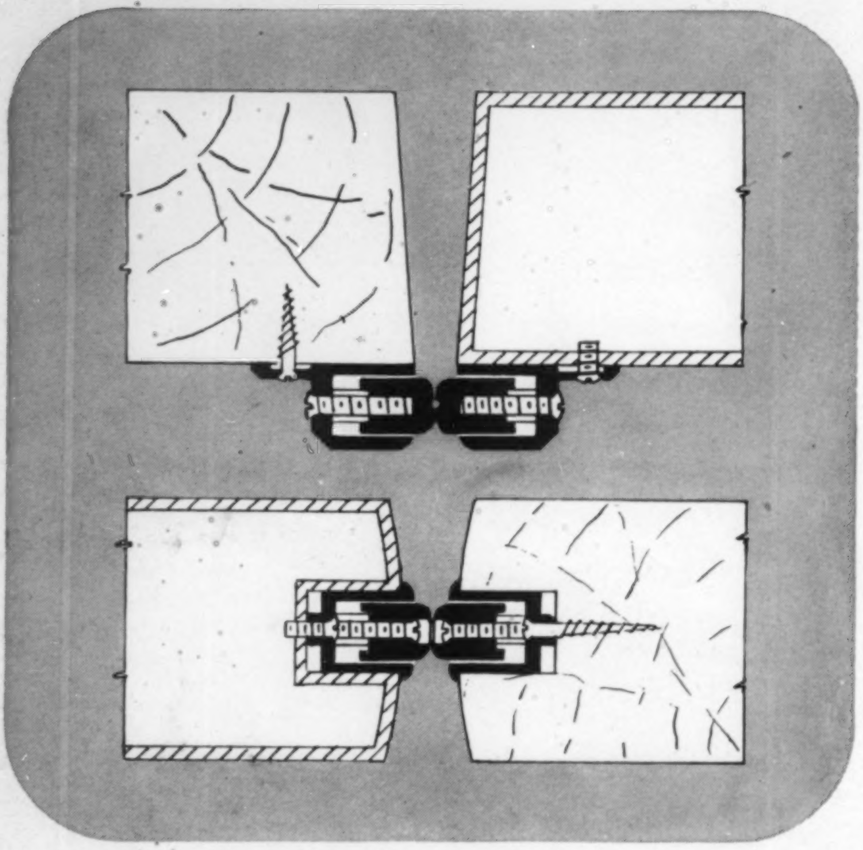
INSULATES AS IT BUILDS ✓
BUILDS AS IT INSULATES ✓

double-duty
INSULITE
The GENUINE

"Insulite" is a registered trade mark, U.S. Pat. Off.

INSULITE DIVISION
MINNESOTA & ONTARIO PAPER COMPANY
MINNEAPOLIS 2, MINNESOTA

MICHAELS
adjustable Astragals



Made of extruded bronze, aluminum or nickel, Michaels Adjustable Astragals compensate for the expansion or contraction of doors. By keeping doors closed as tightly as possible, you eliminate drafts, air currents, and help to keep out dirt and dust. These astragals are simple, practical, rugged . . . easily installed and adjusted, and are available in several styles for any type of door. Type "A" shown in the illustration at the top, may be applied to either wood or hollow metal bevel doors. Or as a stop bead, or at the bottom of doors. Type "E" shown in the second illustration may be applied to bull-nose hollow metal or wood double doors, or at the bottom of doors. Folder containing complete details and specifications will be sent on request. We shall also be glad to send you information on any or all of the other products manufactured by Michaels.

MICHAELS PRODUCTS
Fixtures for Banks and Offices
Welded Bronze Doors
Elevator Doors
Elevator Enclosures
Check Desks (standing and wall)
Lamp Standards
Marquise
Tablets and Signs
Name Plates
Railings (cast and wrought)
Building Directories
Bulletin Boards
Stamped and Cast Radiator Grilles
Grilles and Wickets
Kick and Push Plates
Push Bars
Wrought Iron and Bronze Lighting Fixtures
Wire Work
Cast Thresholds
Extruded Thresholds
Extruded Casements and Store Front Sash
Bronze and Iron Store Fronts
Bronze Double Hung Windows
Bronze Casement Windows

THE MICHAELS ART BRONZE CO., Inc., 234 Scott St., Covington, Ky.
Member of the National Association of Ornamental Nonferrous Metals Manufacturers

THE RECORD REPORTS

(Continued from page 10)

moving at a rate slower than originally anticipated.

Testimony on price effects was received at hearings before the Congressional Joint Committee on the Economic Report. Some witnesses cited the "exorbitant level of construction costs" as a particularly unfavorable factor in the business outlook. Attention was called to cancellation of plant expansion programs because of high costs with heavy blame for high labor costs placed on "the reduced output of labor in the building trades."

The Bureau of Labor Statistics findings are summarized in the following sentence: "It is increasingly evident that the leveling off in (housing) activity is caused by rising construction costs." BLS pares the housing outlook for the year to about 725,000 starts and 765,000 completions.

Slowing down of construction and the continued rise in costs, the Department of Commerce adds, "may soon curb demand for building materials and make possible early replenishment of inventories."

Trade Marks Act in Effect

Construction as well as other industries falls under the new Trade Marks Act, which became effective July 5. The Patent Office, which administers the Act, has brought out points of importance to concerns with trade-marked goods. Among these points is the fact that a mark registered after July 5, if uncontested for five years, definitely becomes the property of the registrant. Hence, concerns not sure of their markets — e.g., because they are new, because they may be litigated, etc. — must register quickly. Again, concerns disputing competitors' marks must watch to see whether their competitors register, in which case failure to protest could bring a loss through default.

Use of other people's brand names to sell completely different products depends on whether the Patent Office thinks the public will be confused. However, names of geographical places, personal names, etc., can be registered if they are associated with the product.

Housing Bill Urged

In his caustic message on the rent control bill, it should be noted that President Truman called again for passage of the Wagner-Ellender-Taft general housing bill. He continues to emphasize six objectives for housing legislation: (1) aid to low-rent housing; (2) insurance for rental housing; (3) adequate farm housing program; (4) slum

(Continued on page 14)

Basement Conservatory. For homes built on sloping lots, this unique downstairs room is a year 'round hobby corner for garden enthusiasts. The new **ARCOLINER** Oil Boiler (Wet Base), provides an abundant supply of clean, efficient, automatic heat. Correctly proportioned heating surfaces with multi-finned flues insure maximum heat absorption. Waterways that extend below fire chamber provide extra heating surface and help keep floor cool, thus making this model also ideal for first floor installation. For use with the Arcoflame or any other standard burner.

Two Interesting Ideas from AMERICAN-Standard

De luxe Bathroom. Designed to satisfy the desire for really luxurious living. Fixtures are distinctively beautiful, efficiently engineered and durably constructed. The modern, roomy **NEO-ANGLE** Bath, occupying space only about four feet square, is of rigid cast iron with a heavy coating of gleaming, easy-to-clean, acid-resisting enamel. The graceful **NEOLYN** Lavatory, the quiet **MASTER ONE-PIECE** Closet and wall-hung **MADENTA** Dental Lavatory are of genuine vitreous china. All four fixtures are available in a wide range of harmonizing colors. Exposed metal is of non-tarnishing Chromard.

AMERICAN-Standard
HEATING · PLUMBING

■ Both of these rooms owe much of their attractiveness and functional fitness to the American-Standard products they contain. Their modern styling and exceptional efficiency are two good reasons why more American homes have heating equipment and plumbing fixtures by American-Standard than by any other single manufacturer. Why not use these finer products in the homes you design, build or remodel? For complete information contact your Heating & Plumbing Contractor. **American Radiator & Standard Sanitary Corporation,** P. O. Box 1226, Pittsburgh 30, Pennsylvania.

Serving the Nation's Health and Comfort

LOOK FOR THIS MARK OF MERIT—It identifies the world's largest line of Heating and Plumbing Products for every use . . . including Boilers, Warm Air Furnaces, Winter Air Conditioners, Water Heaters, for all fuels—Radiators, Convectors, Enclosures—Gas and Oil Burners—Heating Accessories—Bathtubs, Water Closets, Lavatories, Kitchen Sinks, Laundry Trays, Brass Trim—and specialized products for Hospitals, Hotels, Schools, Ships, and Railroads.

EXCLUSIVE—

THERE'S ONLY ONE
GOLDEN GATE
BRIDGE . . . AND

ONLY ONE—

AW SUPER-DIAMOND

FLOOR PLATE

The need for better underfoot protection against costly slipping and falling accidents led to the creation of the exclusive AW Super-Diamond Floor Plate Pattern. Wet, dry or covered with oil, it *Grips Without A Slip.* It has no square corners to hold dirt so it's *Easy To Clean* with hose, brush or mop. AW Super-Diamond Floor Plate is *Easy To Match* and can be cut and installed overnight without interference to production. Follow the lead of front-rank Architects, Engineers and Product Designers and specify AW Super-Diamond Floor Plate for all of your needs.

FREE *Write for a copy of our New 16-Page Booklet L-33. It's packed full of helpful information, maximum sizes, etc. Alan Wood Steel Company, Conshohocken, Pennsylvania.*

GRIP WITHOUT A SLIP!
EASY TO CLEAN!
EASY TO MATCH!

AW SUPER-DIAMOND
FLOOR PLATES THAT GRIP

A Product of ALAN WOOD STEEL COMPANY
Other Products: Billets • Plates • Sheets • Carbon & Alloy

THE RECORD REPORTS

(*Continued from page 12*)

clearance aid to cities; (5) further home financing aids; (6) housing research.

In connection with slum clearance, the National Housing Agency has issued a study on "Slum Land Acquisition" which deals with payments made for land acquired for prewar public housing sites, analyzing more than 10,000 transactions. It includes tables giving city and regional breakdowns.

◆ ◆ ◆

ON THE CALENDAR

May 22–Sept. 15: "Tomorrow's Buildings," exhibit of current work of members, Architectural League of New York, 115 E. 40th St., New York City.

June 13–indefinite: Exhibition of photographs, "Recent Discoveries in Chinese Architecture," Metropolitan Museum of Art, New York City.

August 17–22: Annual Meeting, American Society of Sanitary Engineering, Congress Hotel, Chicago.

Sept. 1–4: Fall Meeting, American Society of Mechanical Engineers, Hotel Utah, Salt Lake City, Utah.

Sept. 11–12: Businessmen's Conference on Urban Problems, Chamber of Commerce of the U. S., Washington, D. C.

Oct. 14–19: 1947 Westchester Better Homes Exposition, Westchester County Center, White Plains, N. Y.

Oct. 18–24: National Metal Exposition, International Amphitheatre, Chicago.

Oct. 20–24: Annual Meeting, American Society for Metals, Palmer House, Chicago.

Oct. 20–24: Annual Meeting, American Welding Society, Sherman Hotel, Chicago.

Oct. 20–23: Annual Fall Meeting, Iron and Steel Division and The Institute of Metals Division, American Institute of Mining and Metallurgical Engineers, Stevens Hotel, Chicago.

Oct. 20–24: Theater Engineering Conference and 62nd Semi-Annual Convention, Society of Motion Picture Engineers, Hotel Pennsylvania, New York.

Oct. 22–25: 1947 Convention, New York State Association of Architects, Hotel Commodore, New York City.

Oct. 30–Nov. 1: 15th Semi-Annual Meeting, American Society of Tool Engineers, Statler Hotel, Boston, Mass.

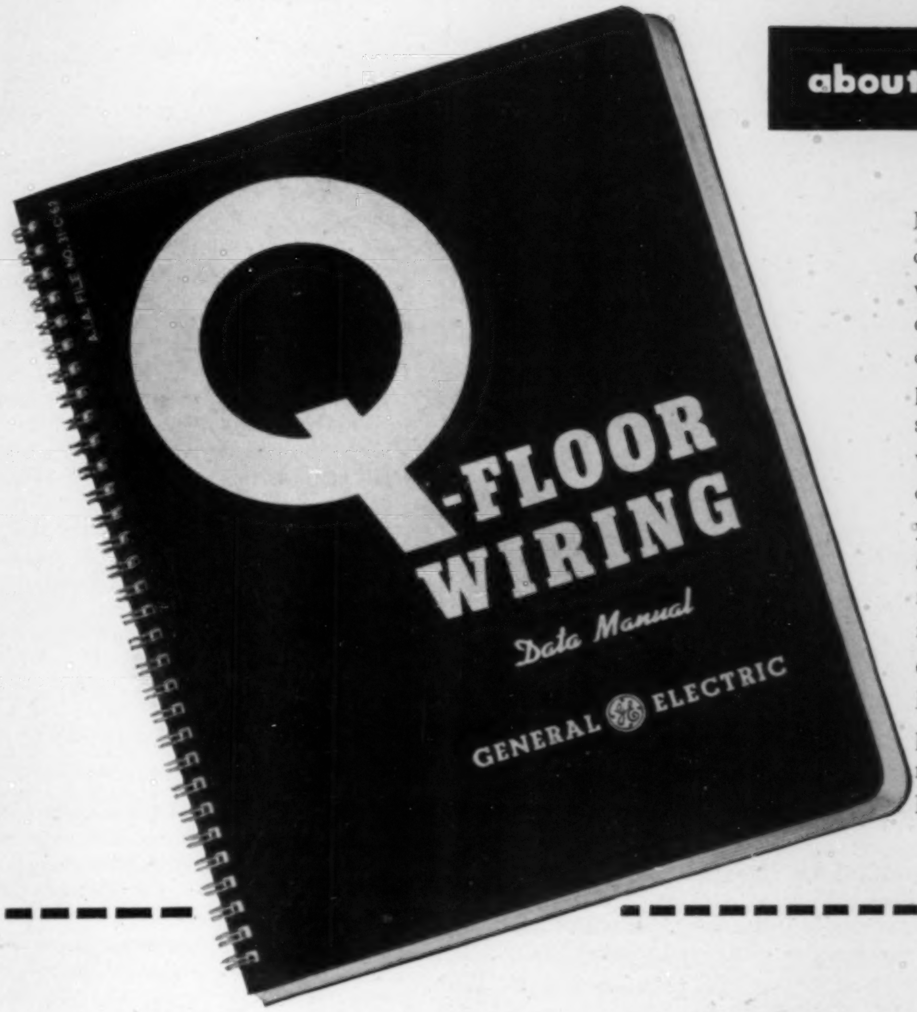
Nov. 3–7: 2nd International Lighting Exposition and Conference, Stevens Hotel, Chicago.

Nov. 10–13: 25th Annual Convention, The American Institute of Steel Construction, Inc., Roney Plaza Hotel, Miami Beach, Fla.

(*Continued on page 16*)

EVERYTHING YOU WANT TO KNOW

about Q-FLOOR wiring



Packed into this brand-new Data Manual are answers to all your questions on planning for Q-Floor wiring. In its 92 pages you'll find enough specifications, descriptions, detail drawings, and installation photographs to give you the full story of this completely modern wiring system. The book has been designed throughout to acquaint you with the versatility of Q-Floors and Q-Floor wiring, and to make it easy for you to incorporate it in your plans. For your free copy of the *Q-Floor Wiring*, write on your letterhead to Section C63-85, Appliance and Merchandise Department, General Electric Company, Bridgeport 2, Connecticut.

Contents:

General Data—Ten pages of explanation, telling what Q-Floor wiring is, and what it can do—and a question-and-answer section, giving you down-to-earth answers to your own questions.

Product Listings—Catalog descriptions and photographs of Q-Floor wiring components.

Layout Design Data—Diagrams and photographs explain how to get the utmost in electrical flexibility with Q-Floor wiring; how to fit it into your plans.

Installation Data—Details on construction requirements and on methods of installation.

Dimensional Drawings—Detail drawings of Q-Floor wiring components.

Illustrations—An excellent selection of installation photographs and pictures of new buildings utilizing Q-Floor wiring for flexible, economical electric systems.

ON LARGE PROJECTS OR SMALL BUILDINGS

Q-Floors with Q-Floor wiring offers long-term economies and construction speed. Remember, too, that the General Electric line of conduit products is a full line for all construction needs.

GENERAL ELECTRIC

INDUSTRIAL BUILDINGS

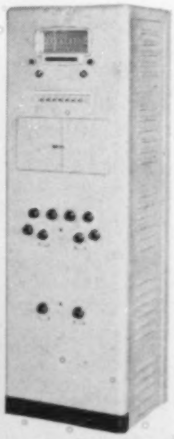
How to make a Good Plan an Efficient Plant...

When you specify a modern sound system—a Stromberg-Carlson *natural-voice* System—you make instant communication between every part of the plant possible. You help the executive in his office, the stenographer at her desk, the man at the bench, work better, more effortlessly, with work music. You supply the executive with a ready answer to any question on plant activity.

More, you specify a system that is *pre-engineered.* That fits into almost any architectural plan.

For information on the many models available, contact your local Stromberg-Carlson Sound Equipment distributor. He is listed in your phone book.

Or write for free booklets describing Stromberg-Carlson Sound Equipment for Industrial Buildings ☐ Offices ☐ Churches ☐ Hotels ☐ Schools ☐ Hospitals ☐. (Check information desired). Address: Stromberg-Carlson Co., Sound Equipment Division, Dept. A-8, 100 Carlson Road, Rochester 3, New York.



The heart of any industrial sound system. Stromberg-Carlson Standard Sound System Model 750. Compact glacier gray cabinet houses AM-FM radio receiver, record player, all controls and amplifiers.

STROMBERG-CARLSON

NATURAL-VOICE SOUND SYSTEMS

THE RECORD REPORTS

(*Continued from page 14*)

Dec. 2–5: Annual Meeting, American Society of Mechanical Engineers, Chalfonte-Haddon Hall, Atlantic City, N. J.

CONSTRUCTION UP

New construction put in place during the first six months of 1947 increased 40.1 per cent over that in the same period of last year, according to the Construction Division, Department of Commerce.

For the first half of the year the total is estimated at $5,356 million, compared with $3,824 million in the first half of 1946. More than a seasonal gain was reported in June, when total new construction put in place amounted to $1,062 million, an increase of 10.9 per cent over the May figure.

Private construction during the first six months this year totaled $4,115 million, a gain of 31.9 per cent over the same period last year. Of this total, private residential construction (exclusive of farm) accounted for $1,883 million, a gain of 63.2 per cent over last year. Public residential construction accounted for $130 million, an increase of 75.6 per cent over 1946.

LABOR-MANAGEMENT PROGRAM LAUNCHED

A comprehensive labor-management program to stimulate a high level of home building and commercial construction has been launched in Metropolitan New York as a means of forestalling any possible business recession. Sponsored by the New York Building Congress, in conjunction with the Building and Construction Trades Council, A. F. of L., and the Building Trades Employers Association, the campaign is designed to stabilize building costs, increase labor productivity and efficiency and to dispel the "wait and see" attitude of investors who are holding off construction work in anticipation of lower prices.

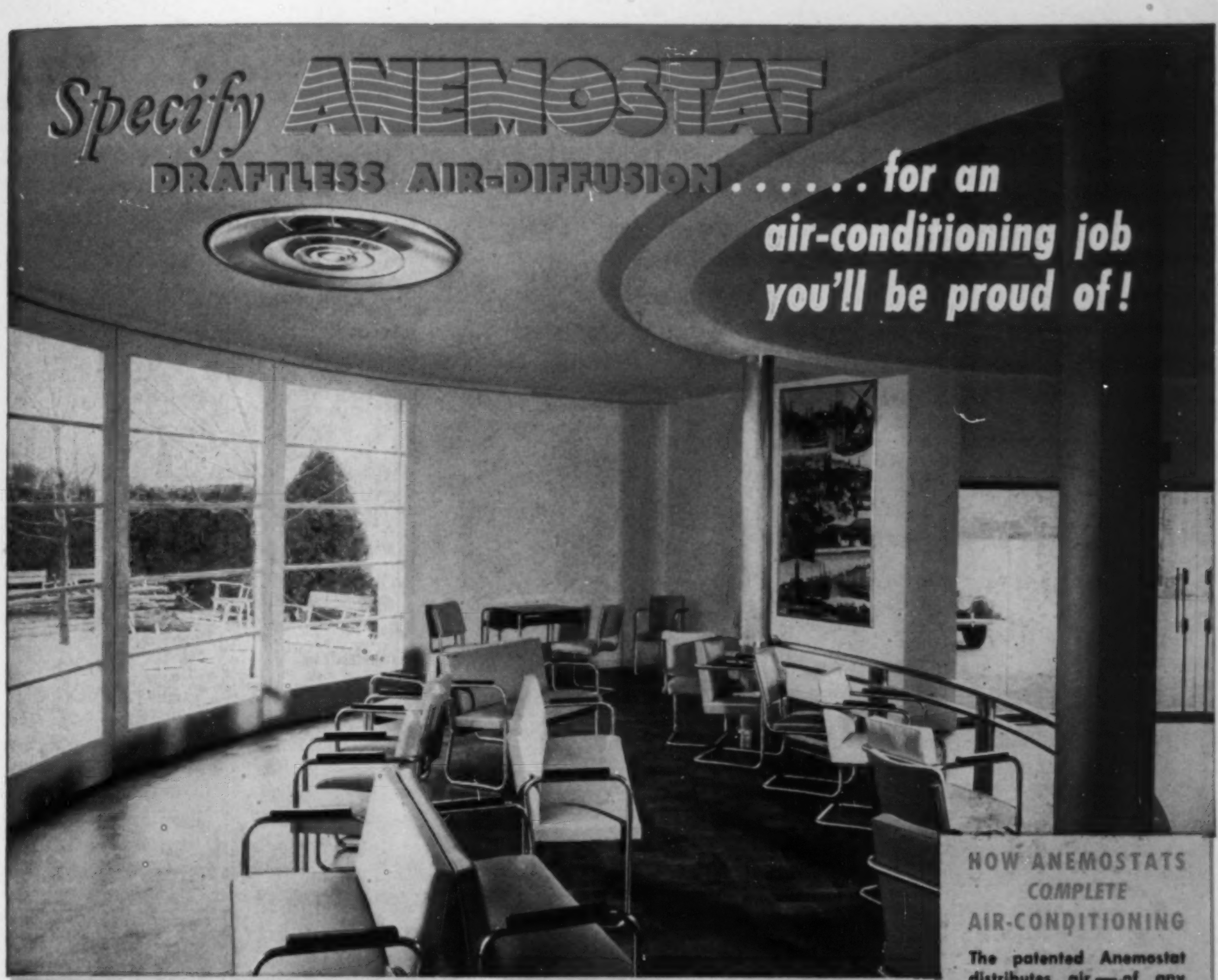
In announcing the program, Max H. Foley, president of the Building Congress and chairman of the sponsoring committee, said "that a new and unprecedented pledge of cooperation and higher productivity" had been given management by leaders of the building trades unions. Howard McSpedon, president of the Building and Construction Trades Council, A. F. of L., said the pledge of cooperation will be effective for all types of building — homes, commercial structures and institutional buildings.

The pledge reads:

"Our trades stand willing and ready to join with our employers and all others

(*Continued on page 18*)

Specify ANEMOSTAT DRAFTLESS AIR-DIFFUSION . . . . . for an air-conditioning job you'll be proud of!



HOW ANEMOSTATS *COMPLETE* AIR-CONDITIONING

The patented Anemostat distributes air — of any duct velocity — in all directions and in a multiplicity of planes. Simultaneously, counter-currents created by the device siphon *into the Anemostat* room-air equal to about 35 per cent of the volume of the supply air. This room-air is mixed with the supply-air *within the diffuser* before the air-mixture is discharged into the room. Furthermore, velocity of the incoming air is instantly reduced within the Anemostat by air-expansion.

In this way, the Anemostat noiselessly diffuses air of any duct velocity throughout the entire room . . . eliminates drafts . . . closely equalizes temperature and humidity . . . prevents air-stratification. There is no substitute for Anemostat air-diffusion!

The best "advertising" for functional-minded architects, engineers and contractors is the excellence of their own craftsmanship . . . represented by modern structures that make living and working more pleasant. That is why they invariably regard an air-conditioning installation with Anemostat draftless air-diffusion as a job well done. A job that *advertises* them. A job to be proud of!

Anemostat takes the "raw materials" of air-conditioning and actually "processes" them into COMFORT. There are no draft-producing grilles or registers, for Anemostat air-diffusers distribute the conditioned air in pre-determined, controlled patterns. Result: there are no drafts . . . no dead air pockets . . . *room temperature and humidity are equalized throughout.*

Because Anemostat wall or ceiling diffusers permit employment of stepped-up duct velocities and greater temperature differentials, duct sizes and duct outlets may be reduced — an important economy feature. Because Anemostats have no moving parts to wear out, maintenance cost is nil.

Thousands of Anemostat installations throughout the country — in virtually every industry — are putting new comfort into air-conditioning. So, remember to specify Anemostat draftless air-diffusion for an air-conditioning job you'll be proud of!

Write for Information.

ANEMOSTAT

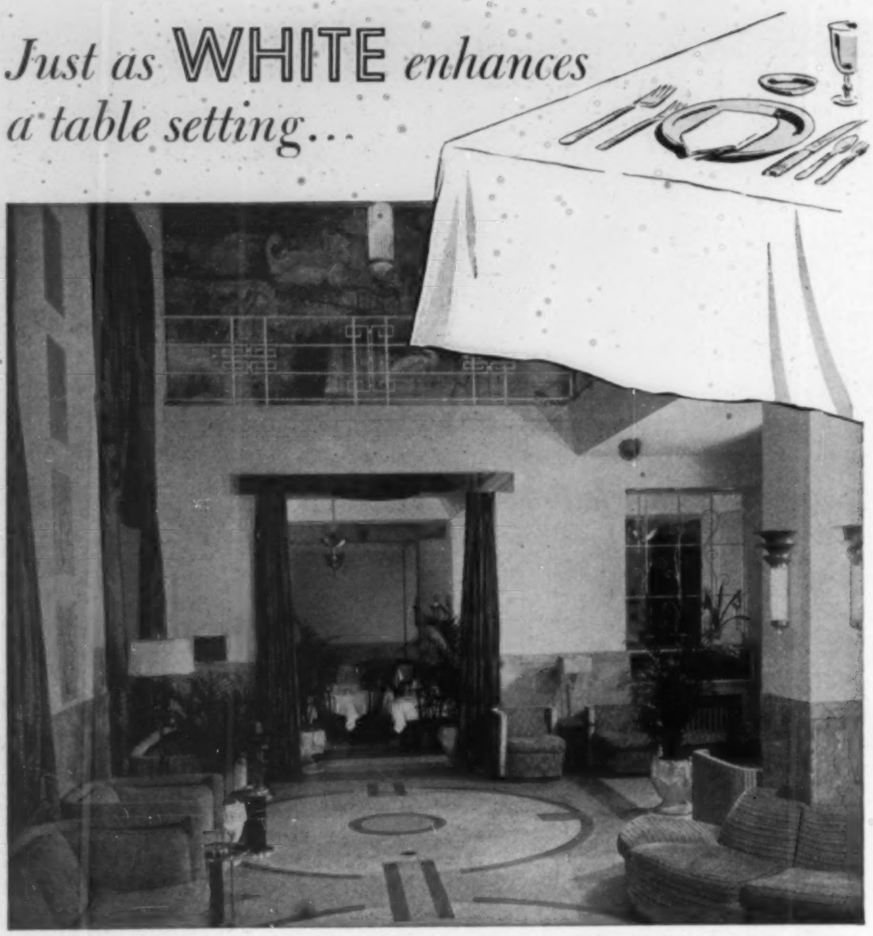
REG. U. S. PAT. OFF.

ANEMOSTAT CORPORATION OF AMERICA
10 East 39th Street, New York 16, N. Y.
REPRESENTATIVES IN PRINCIPAL CITIES

"NO AIR-CONDITIONING SYSTEM IS BETTER THAN ITS AIR DISTRIBUTION"

AC-1117

Just as WHITE enhances a table setting...



Fine Terrazzo Floor of Atlas White Cement, Hotel Victor, Miami Beach, Florida

Concrete craftsmen choose

Atlas White Cement

A lustrous white tablecloth forms a background for silver to sparkle and candles to gleam. So, too, a matrix of Atlas White Cement sets off the color values of aggregates or pigments in Terrazzo, Stucco, Cement Paint and Architectural Concrete Slabs. Such a "setting" has the uniform clarity to complement the desired color overtones, whether in contrast or blend.

Atlas White complies with Federal and ASTM specifications for portland cement. It has the same advantages for concrete and is used in the same way. Cleaning is easy. Maintenance costs stay low.

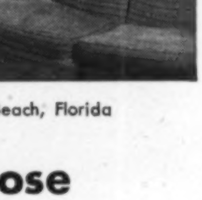
For further information on the uses of Atlas White Cement, see SWEET'S Catalog, Sections 12B/7 and 13B/7, or write to Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), Chrysler Building, New York 17, New York.

AR-C-19

FOR BEAUTY AND UTILITY

ATLAS WHITE CEMENT

FOR TERRAZZO, PAINT, SLABS, STUCCO



"THEATRE GUILD ON THE AIR"—*Sponsored by U. S. Steel Subsidiaries*
Sunday Evenings—September to June—ABC Network

THE RECORD REPORTS

(*Continued from page 16*)

in our industry to go ahead with all jobs and help bring about a reduction in building costs by pledging again as our agreements now provide for until 1950:

"1. No limitation on a man's output because we have always agreed a fair day's work for a fair day's wage;

"2. No strikes or stoppages for agreement or jurisdictional disputes because all our agreements provide for mediation or arbitration of such disputes;

"3. We will man all jobs with sufficient labor and we expect cooperation not only of our employer, but also the awarding authorities in scheduling their jobs so that we can plan with some degree of certainty;

"4. We again emphasize the right of the employer to hire or discharge any man he sees fit and, as our present agreements and laws provide, we will discipline any member who violates our agreement in this respect."

In a strong warning to suppliers and manufacturers of building materials and equipment against rising costs, Mr. Foley urged their full cooperation in the construction campaign, and expressed the hope that "there will be a determined effort on the part of the suppliers of materials and equipment to stabilize prices while there are still buyers." He asserted that he saw no possibility of a drastic reduction in building costs in the near future, but emphasized that at the present time it is more important to stabilize costs. "It is to be hoped," he said, "that we can stabilize at a somewhat lower level than the present, but the important thing is to reach a level at which a builder can give an owner a cost estimate on a building operation with a reasonable expectation that it will not be exceeded."

BUILDING NOTES

Army Medical Center

What is planned to be the greatest medical research center in the world will be built at Forest Glen, Md., by the Corps of Engineers for the Office of the Surgeon General, the War Department has announced. In keeping with technological advances in all fields, based on experiences in the last war, the center will be equipped to anticipate and meet the medical problems of the future as well as to cope with those of the present. The initial cost is estimated at approximately $40 million.

Officially designated as the Army Medical Research and Graduate Teaching Center, the project will consist of a 1000-bed general medical and surgical hospital, capable of expansion to 1500 beds; the Army Institute of Pathology

(*Continued on page 126*)

For All-weather Ventilation

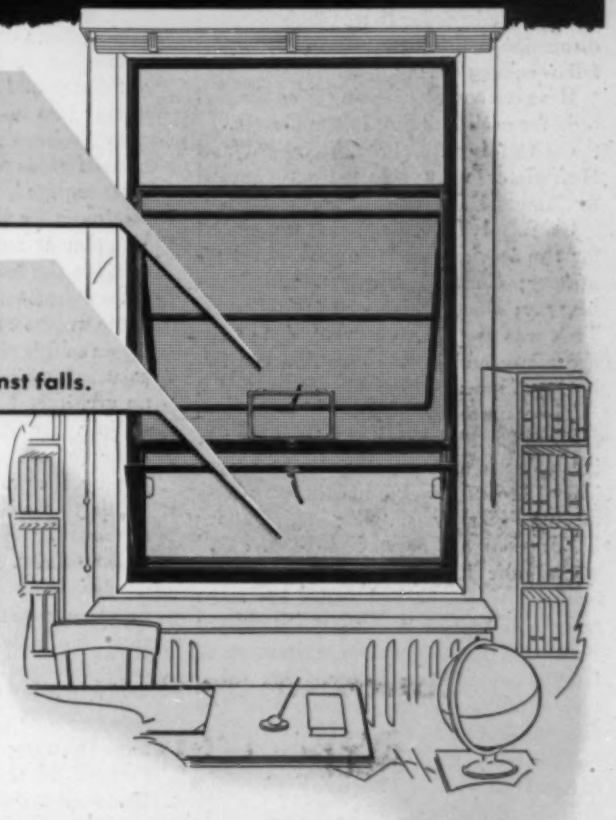
LOW-COST FENCRAFT PROJECTED WINDOWS

Designed for: SCHOOLS • HOSPITALS • OFFICES AND PUBLIC BUILDINGS

OPEN-OUT VENT—
Forms canopy over opening. Sheds rain and snow away from the opening.

SILL VENT—

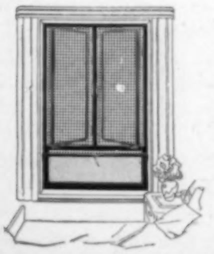
1. **Deflects incoming air upward—prevents drafts.**
2. **Sheds rain to outside.**
3. **Prevents leaning out windows—guards against falls.**



Vents are easy to reach—simple to open, close and lock. Ventilators stay in selected open position—close to a weather-tight fit. Both sides can safely be washed from inside the room. Screens attached or removed from inside.

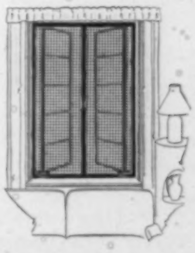
The trim lines of Fencraft Projected Windows enhance both inside and outside appearance—match architectural trends to the horizontal. Extra daylight, firesafety and low maintenance . . . all are benefits that make them ideal for many types of buildings.

STANDARDIZED FOR ECONOMY. The Fencraft family of windows—Projected, Combination and Casement—has been standardized in sizes that conform with current modular construction practice. Standardization reduces first cost and saves installation time and money. Fencraft Windows are built by craftsmen of America's oldest and largest steel window manufacturer. For details, see Sweet's Architectural File (Section 16a-9) or mail the coupon.



FENCRAFT COMBINATION WINDOW

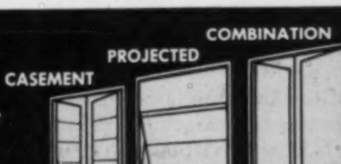
—generous fresh-air ventilation. Swing leaves deflect breezes into the room. In-tilting sill vent protects against drafts. Both sides safely washed from inside. Ideal for hospitals and office buildings.



FENCRAFT CASEMENT WINDOW

—safe washing—from inside. Easy to operate. Uniform screens, protected from outside dirt. "Homey" appearance makes them ideal for clubs, large homes, dormitories, and nurses' homes.

Fenestra



FENCRAFT INTERMEDIATE STEEL WINDOWS

Detroit Steel Products Company
Dept. AR-8,
2252 East Grand Blvd.,
Detroit 11, Michigan

Please send me data on types and sizes of the new Fencraft family of Fenestra Windows:

Name____________________________

Company__________________________

Address___________________________

LETTERS FROM RECORD READERS

RECORD:

We have found lately published books, publicity and propaganda that have been quite misleading in regard to the planning and building of Rockefeller Center. Thought it advisable not to fight publicity, but to establish the facts from the records in order to avoid continuous discussion which comes up with our fellow colleagues.

Here is a complete listing from the records for each building in the Center.

On October 22, 1929, Reinhard and Hofmeister were selected as General Architects.

On July 1, 1930, a contract was signed for the services of: Reinhard and Hofmeister; Corbett, Harrison and MacMurray; Hood, Godley and Fouilhoux. This was the first contract signed for the group and in same we find the following clause:

"The primary inducement to the Owners for the making of this agreement is the desire to secure the personal services of L. Andrew Reinhard, Henry Hofmeister, Harvey W. Corbett, Wallace K. Harrison and Raymond Hood. . . ."

On June 1, 1935, the July 1, 1930, contract was cancelled and a new contract was signed due to the death of Raymond Hood and the retirement of Godley some time before. This takes you through to the beginning of the International Building — 1936.

The RCA Building, RKO Building, Music Hall, Center Theater, French and British Buildings, and International Building, had the Architects of Record listed as follows: Reinhard and Hofmeister; Corbett, Harrison and MacMurray; Hood and Fouilhoux.

The Time and Life Building Architects of Record: Reinhard and Hofmeister; Corbett and MacMurray; Wallace K. Harrison; J. Andrew Fouilhoux.

The Associated Press Building, same as the Time and Life Building listing.

The Eastern Air Lines and Center Garage Architects of Record: Reinhard and Hofmeister; Wallace K. Harrison; J. Andrew Fouilhoux.

The U. S. Rubber Building, the same listing as above.

— Reinhard & Hofmeister
by L. Andrew Reinhard

RECORD:

I read with absorbing interest the text of Carl Koch's address to the A.I.A. convention. You may be sure this is a subject which has occupied the thoughts of many young architects, and I believe Mr. Koch has been the spokesman for more people than he realized.

A professional man, to be worthy of the title, should put service above personal gain. Likewise, a professional organization should be the vehicle through which its members and the entire profession may find inspiration and guidance toward that common aim. However, it seems that the Institute's chief concern with professionalism is in the maintenance of an arbitrary code of ethics. Strict compliance will supposedly insure an architect honor among his associates and have the magic effect of raising him above the level of the ordinary business man. After thus assuring himself of his standing, he is entitled, in fact required, to charge a stipulated minimum fee for "professional services." Whether or not the value of his service justifies the fee seems unimportant.

As a draftsman I resisted attempts by trade unions to obtain my membership. Their selfish aims seemed contradictory to worth-while standards of service. As an architect I have declined invitations to join the A.I.A. for essentially the same reason. Of course, the stock rejoinder is always "get in and push" or words to that effect. That was exactly the answer that I received from the union official. Obviously, the idea of a change in policy of the trade-union movement was, to say the least, impractical. To a lesser degree, I have the same feeling about the Institute.

Mr. Koch has spoken and the profession has listened respectfully. His words have meaning because they are backed by honest buildings and grateful clients. However, a less experienced or less successful architect must devote his energies to building his reputation and sustaining himself. No time for fighting windmills!

— Norris M. Gaddis
Assistant Professor of Architecture,
Iowa State College

RECORD:

Our thanks to Architectural Record for publishing the paper which Carl Koch delivered at the A.I.A. convention in April. Those of us who did not attend had gotten a somewhat distorted report of the paper. I am fully in accord with your editorial in the June issue and feel that Koch, in a most courteous and constructive manner, has presented the shortcomings of the Institute. The fence-riding of the Institute is not limited to Boston or the national office in Washington, but is found in virtually all chapters with which I have had contact and is most prevalent here in Texas.

Our friend, Chester Nagel, in the May issue of the *Journal of the American Institute of Architects* presented a voice from within the Institute in his letter, "What's Wrong with the Institute?" We are fully in accord with the thoughts and principles expressed by Koch and Nagel and hope the Record will help carry the principles of good architecture to the very heart of the profession.

— Charles Granger, A.I.A.

RECORD:

The Old Guard, still articulate on their favorite nostrums, have apparently arrived at that place where there is nothing more to learn. The Learned, timid on the question, "What type of man do you employ to teach the students?" and inarticulate on such questions as "To what type of office does the graduate go?" and "What has been the advancement in the method of architectural education in the last 20 years — if any?" have arrived at that same Isle of the Blessed where there is nothing to teach. . . .

Most architectural schools either consciously or unconsciously use an offshoot of the Beaux-Arts Grand Plan method in that they ask an embryo architect to design (with all the verb implies) and present in five to six weeks a project, the scope of which in actual practice requires the undivided efforts of several experienced men and the facilities of a smoothly working architectural office. The result for the student, contrary to the claimed trend toward analytical thoroughness, is haphazard reasoning and cosmetic cliches all wrapped up in a facile presentation. I would much rather have a graduate who has designed well a classroom than sloughed through a half-baked solution of an intricate school building project, who knows the classroom problems of the teacher and the child, who has studied the visual conditions, acoustics, ventilation, equipment, and maintenance problems of a classroom.

The Educators' idea is to start the creative fire in the student by simple problems in elementary design, kindle it in intermediate, pour the coal on in advanced, and really fan the blaze in the thesis. The problem scope is too great and the student doesn't learn to think basically, but most of them learn to "draw." There is a partially successful effort to tie in construction and allied courses with the design. Architectural schools might well take a hint from the progressive elementary and high school teaching methods of "learning-doing."

To the Old Guard I would say: The more progressive and thinking student wants to start in the small progressive office. Why? He is closer to the brains and heart of each problem, and, ironically, the smaller office now *seems* to have more time and money to devote to his education, which answers the other question — this is probably the biggest advancement in architectural education in the last 20 years.

— Don Hatch, *Architect*

CONSTRUCTION COST INDEXES — Labor and Materials

United States average 1926—1929 = 100

Compiled by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corporation, from data collected by E. H. Boeckh & Associates, Inc.

	NEW YORK					ATLANTA				
	Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings		Residential		Apts., Hotels, Office Bldgs.	Commercial and Factory Buildings	
Period	*Brick*	*Frame*	*Brick and Concr.*	*Brick and Concr.*	*Brick and Steel*	*Brick*	*Frame*	*Brick and Concr.*	*Brick and Concr.*	*Brick and Steel*
1920	136.1	136.9	123.3	123.6	122.6	122.8	122.9	108.6	109.8	105.7
1925	121.5	122.8	111.4	113.3	110.3	86.4	85.0	88.6	92.5	83.4
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1941	134.5	135.1	135.1	137.2	134.5	97.5	96.1	99.9	101.4	100.8
1942	139.1	140.7	137.9	139.3	137.1	102.8	102.5	104.4	104.9	105.1
1943	142.5	144.5	140.2	141.7	139.0	109.2	109.8	108.5	108.1	108.7
1944	153.1	154.3	149.6	152.6	149.6	123.2	124.5	117.3	117.2	118.2
1945	160.5	161.7	156.3	158.0	155.4	132.1	133.9	123.2	122.8	123.3
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
Feb. 1947	204.7	208.9	194.7	193.5	191.1	165.8	166.8	148.8	149.9	148.8
Mar. 1947	211.2	217.2	196.2	194.4	192.9	178.7	182.9	153.4	152.0	153.1
Apr. 1947	217.6	220.8	204.7	205.9	202.4	179.2	183.3	154.4	153.5	153.5
May 1947	219.1	221.6	205.6	206.8	203.4	180.2	183.9	155.1	154.1	154.2
	% increase over 1939					*% increase over 1939*				
May 1947	**77.4**	**81.0**	**57.3**	**54.9**	**56.2**	**108.9**	**121.2**	**63.1**	**58.3**	**62.8**
	ST. LOUIS					SAN FRANCISCO				
1920	118.1	121.1	112.1	110.7	113.1	108.8	107.5	115.2	115.1	122.1
1925	118.6	118.4	116.3	118.1	114.4	91.0	86.5	99.5	102.1	98.0
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1941	118.8	118.0	121.2	121.7	122.2	116.3	112.9	120.5	123.4	124.3
1942	124.5	123.3	126.9	128.6	126.9	123.6	120.1	127.5	129.3	130.8
1943	128.2	126.4	131.2	133.3	130.3	131.3	127.7	133.2	136.6	136.3
1944	138.4	138.4	135.7	136.7	136.6	139.4	137.1	139.4	142.0	142.4
1945	152.8	152.3	146.2	148.5	145.6	146.2	144.3	144.5	146.8	147.9
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
Feb. 1947	187.6	187.0	173.9	175.2	172.8	177.0	173.9	172.4	174.6	176.1
Mar. 1947	196.9	198.9	175.8	176.4	175.3	185.6	184.9	174.2	175.7	178.4
Apr. 1947	199.1	200.3	178.0	179.0	176.9	188.6	187.0	177.8	180.4	180.7
May 1947	199.3	200.5	178.3	179.2	177.1	188.8	187.2	178.1	180.6	180.9
	% increase over 1939					*% increase over 1939*				
May 1947	**80.8**	**87.5**	**50.1**	**49.6**	**48.8**	**78.8**	**88.5**	**51.7**	**48.2**	**55.2**

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926–29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

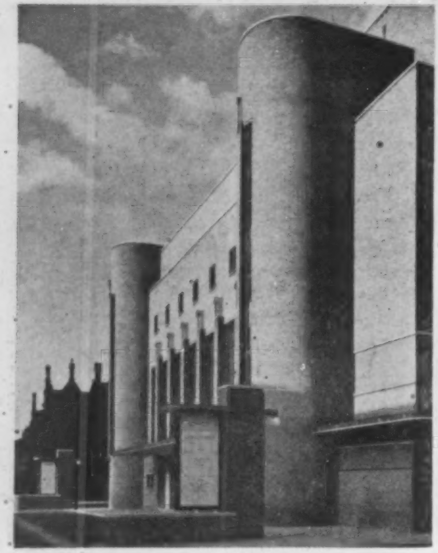
$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published legal prices, thus, indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear whenever changes are significant.

REQUIRED READING



Liverpool Philharmonic Hall. H. J. Rowse, architect. — "Recent English Architecture"

BRITISH BUILDING

Recent English Architecture: 1920–1940. Selected by the Architecture Club. London, W.C. 2, England (2–10 Tavistock St.), Country Life Ltd., 1947. 7¼ by 9¾ in. 74 pp. illus. 7s. 6d.

With these 65 well chosen photographs, a small group of English men and women interested in widening the public appreciation of architecture has succeeded in summing up the best of English building in the past quarter-century and predicting what can be expected in the years immediately ahead.

The group behind the project was a committee of the Architecture Club, whose membership, limited to 300, consists of architects, writers and "persons interested in furthering good building." The illustrations were chosen, the introduction says, "for the contribution the originals make to our heritage of building, whether they are modern or traditional in style. It is misleading to discriminate between buildings by these labels, which are largely a matter of fashion. There is truth in the saying that it is traditional to be modern; the important thing is that modern buildings shall be worthy of the national tradition, whatever form they assume."

Grouped according to type — public buildings, social services, office buildings and business premises, ecclesiastical, educational, domestic — the photographs are allowed to speak for themselves except for very brief captions. The book thus is in effect an exhibition, and ideally suited to study and analysis.

Low-cost housing has been omitted as too broad a subject to be treated in so brief a book, but the several apartment developments included make up in large part for this lack. All in all, the selection is well rounded and well presented.

MORE MAYA

The Ancient Maya. By Sylvanus G. Morley. Stanford University, Calif., Stanford University Press, 1946. 6 by 9 in. xxxii + 520 pp. illus. $10.00.

"Maya stone architecture is as distinctive as Greek, Roman, or Gothic," says Dr. Morley. "It has its own canons, its own structural practices, its local variations, but fundamentally it is one. . . . It was inevitable, given the high intelligence and native genius of the ancient Maya, coupled with their strong religious fervor, that they should develop a great religious architecture of their own, which is just what they did. Beyond the immediate needs of their domestic economy — corn-planting, pottery-making, and weaving — no other activity consumed so much of their remaining time and energy as did their architecture."

This is an absorbing book. Familiar with every side of Maya life as reconstructed from excavation and research, Dr. Morley has brought the ancient civilization almost back to life in this volume. His own explorations and study, which he here sums up, have covered the past 40 years and have brought him into close contact with the present-day Mayans.

What Dr. Morley has given us is a history of a civilization. Everything is here from a description of the region where the Maya lived and of the people themselves to their abilities and achievements (notably in the fields of astronomy and mathematics), their manners and their customs. Of particular interest is his comparison of the Maya with two other early American cultures of note — the Inca and the Aztec.

TECHNICAL BOOKS

STEEL MANUAL

Steel Construction: A Manual for Architects, Engineers and Fabricators of Buildings and Other Steel Structures. 5th ed. New York (101 Park Ave.), American Institute of Steel Construction, 1947. 6 by 9 in. 432 pp. illus. $2.00.

This latest edition of the A.I.S.C. Steel Manual has been substantially revised in two sections — the Specification for the Design, Fabrication and Erection of Structural Steel for Buildings, and the Code of Standard Practice for Steel Buildings and Bridges. Also, to conform to lists agreed upon by industry since the end of the war, the tables of available rolled shapes have been "radically revised," and the various tables throughout the Manual have been correspondingly corrected.

Apart from these necessary revisions, the Manual follows previous editions: Part I contains data most frequently referred to by structural estimators and designers; Part II, the data required in making shop drawings; Part III, tables of allowable loads; Part IV, standard specifications and codes; and Part V, miscellaneous data and mathematical tables for ready reference.

SIMPLIFIED FILING

A.I.A. Standard Filing System and Alphabetical Index: 1947 Edition. Washington 6, D.C. (1741 New York Ave.), The American Institute of Architects, 1947. 8½ by 11 in. 64 pp. $2.00.

The American Institute of Architects Filing System for Architectural Plates and Articles. 2nd ed. Same as above, 1946. 8½ by 11 in. 20 pp. $1.00.

Here are two new editions of standard A.I.A. documents, especially compiled to simplify architects' filing problems. The first, for the filing of information on materials, appliances and equipment, has been revised to correspond more adequately to filing needs not only directly related to construction generally but to activities related thereto; it now contains 41 major divisions, the titles of which conform in general with the headings of a comprehensive construction and mechanical equipment specification. The second booklet, providing a simple method for the filing of architectural plates and articles, has been made more valuable and more easily used by the addition of a detailed alphabetical index.

CITY PLANNING

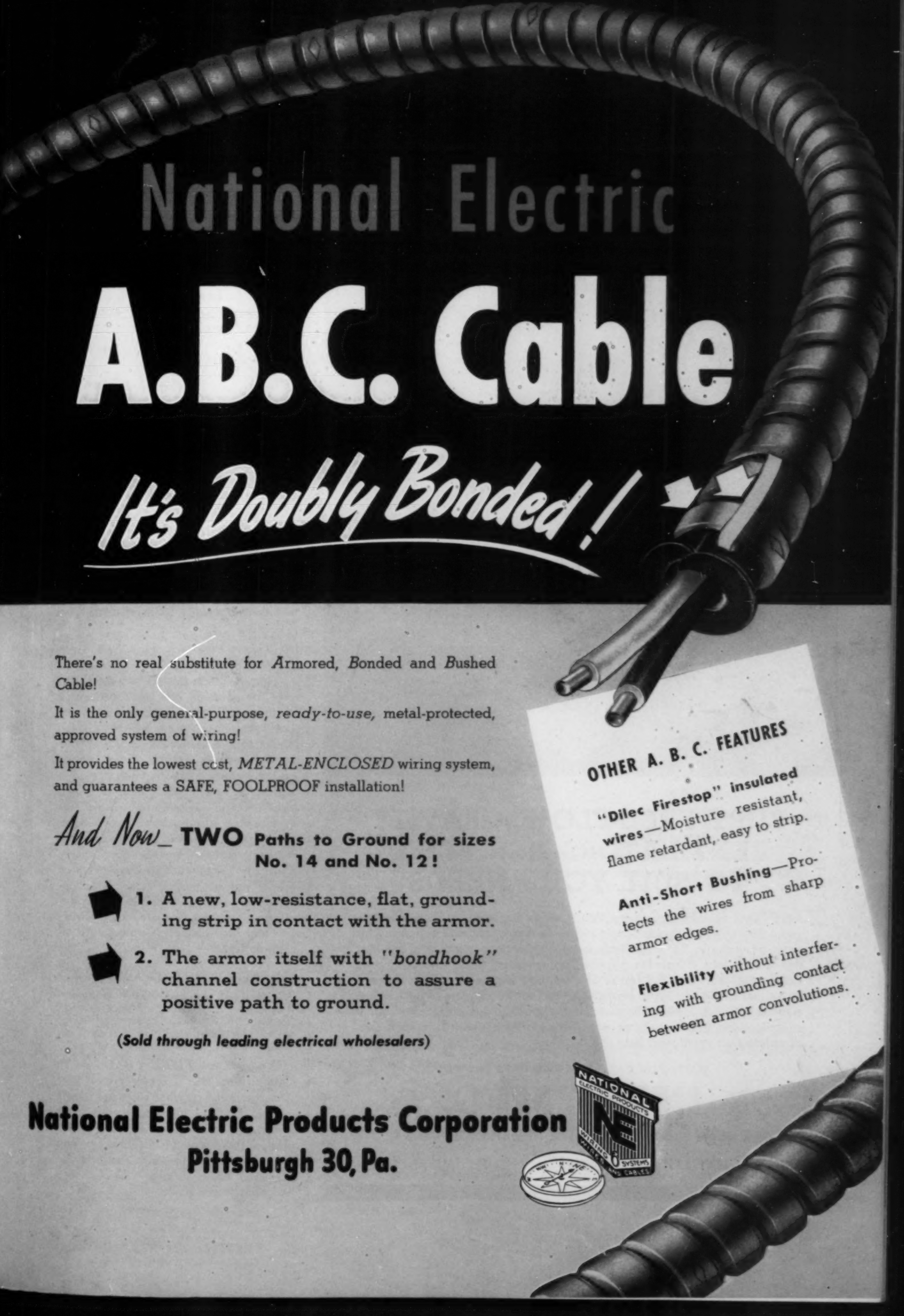
GLENDALE, OHIO

The Village Plan: Glendale, Ohio. Prepared by Harland Bartholomew & Associates. Glendale, Ohio, Village Planning Commission, 1947. 7 by 9 in. 78 pp. illus.

Glendale's 2400 or so residents do not believe, obviously, in waiting to lock the stable until their horse has been stolen. Their village is unusually attractive, with well laid out streets, an air of spaciousness, and only a small area which might be considered blighted. Yet in 1942 Glendale engaged city planners Harland Bartholomew & Associates "to prepare a village plan." The resulting report on conditions and prospects is highly favorable.

Glendale's chief problems, the report indicates, are protection of the village from adverse use of adjacent land and maintenance of residential amenities within the village itself. Certain re-

(*Continued on page 30*)



National Electric

A.B.C. Cable

It's Doubly Bonded!

There's no real substitute for *A*rmored, *B*onded and *B*ushed Cable!

It is the only general-purpose, *ready-to-use,* metal-protected, approved system of wiring!

It provides the lowest cost, *METAL-ENCLOSED* wiring system, and guarantees a SAFE, FOOLPROOF installation!

And Now— **TWO Paths to Ground for sizes No. 14 and No. 12!**

1. A new, low-resistance, flat, grounding strip in contact with the armor.
2. The armor itself with *"bondhook"* channel construction to assure a positive path to ground.

(Sold through leading electrical wholesalers)

OTHER A. B. C. FEATURES

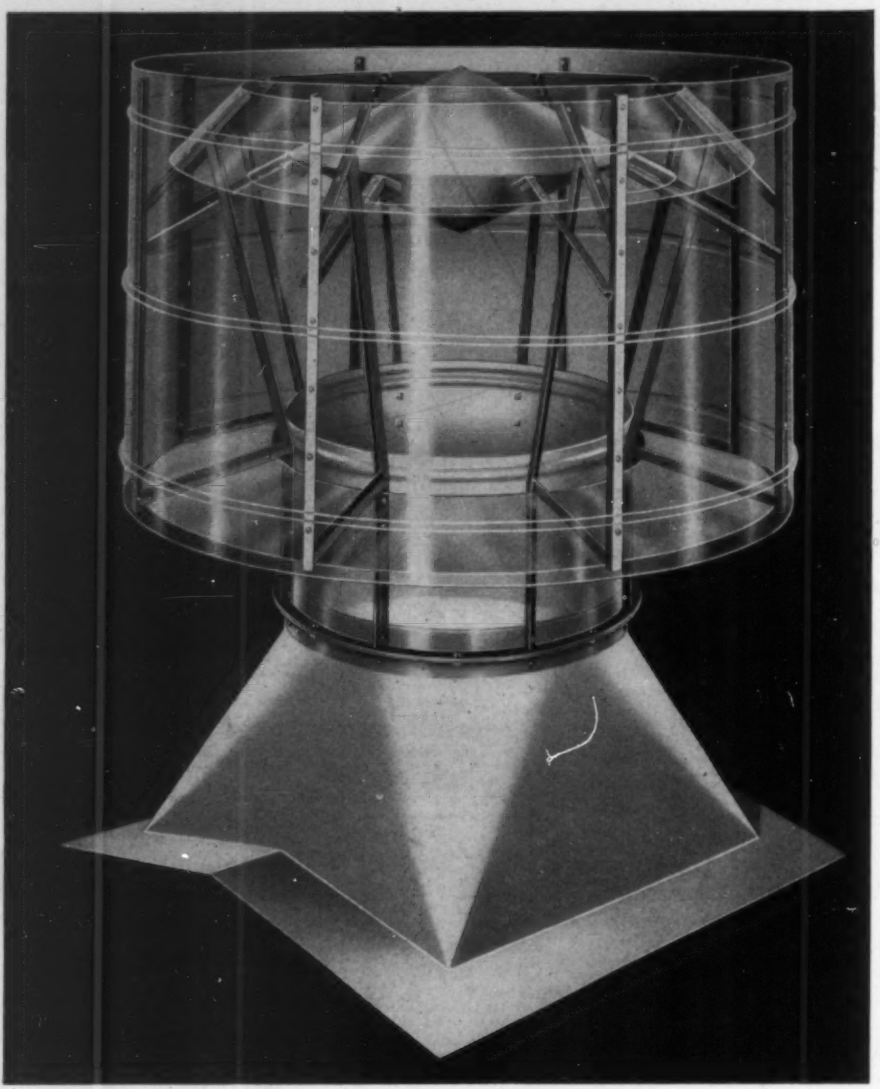
"Dilec Firestop" insulated wires—Moisture resistant, flame retardant, easy to strip.

Anti-Short Bushing—Protects the wires from sharp armor edges.

Flexibility without interfering with grounding contact between armor convolutions.

National Electric Products Corporation
Pittsburgh 30, Pa.

KNEE HIGH OR FIVE FEET OVER YOUR HEAD



BURT FREE-FLOW GRAVITY VENTILATORS ARE SIZED TO SUIT YOUR NEEDS

An 8″ Burt Free-Flow Gravity Ventilator is tiny in comparison with the giant 96″ unit that stands almost eleven feet in height and exhausts 100 times as much air. Yet each finds many applications in industry. The Burt line is complete. It includes gravity, fan, revolving head and continuous ridge ventilators in a full range of sizes. Burt Engineers can recommend —without bias—the type best suited to your needs. Their assistance is available without obligation—to help you lay out plans and submit specifications. See Sweet's or write for catalog and data sheets on the complete Burt ventilating line—NOW!

WRITE FOR CATALOGS AND DATA SHEETS

The BURT MFG. Co.

48 E. South Street Akron 11, Ohio, U.S.A.

VENTILATORS, LOUVERS, OIL FILTERS AND SHEET METAL SPECIALTIES

(*Continued from page 28*)

habilitation and rebuilding are recommended, much of it in the Negro development; a proposed street plan calls for widening of three major thoroughfares, construction of an underpass under the railroad tracks, and development of new minor streets if and when required. Other recommendations include enlarged and new play areas and parks and a landing field for helicopters. Of particular interest is the proposal to create a "municipal forest" along the entire southern border of the village and part of the northern to act as a buffer strip which, in conjunction with the cemetery and institutions immediately adjacent to the village limits would ring Glendale with a zone of public and semi-public property.

It is encouraging to note that some progress already has been made toward the realization of this plan. The zoning ordinance and the minimum standards housing ordinance have been adopted, and part of the land for the proposed municipal forest has been acquired.

CHICAGO

Woodlawn: A Study in Community Conservation. Prepared by the Chicago Plan Commission in Collaboration with the Woodlawn Planning Committee. Chicago, Ill., Chicago Plan Commission, 1946. 8½ by 11 in. 76 pp. illus.

This report on the existing conditions and the needs of one small residential section of Chicago, is an analysis of "the problems common to most of the middle-aged Chicago residential areas." Following the outlines and the precepts of the comprehensive plan for the city as a whole, it establishes community and neighborhood boundaries, designates certain streets to be developed as major thoroughfares, makes concrete parking recommendations, specifies the location and extent of essential school and play areas, and in general outlines a conservation and development program aimed at making Woodlawn an attractive and economically sound residential community.

HOSPITAL PROGRAMMING

The Hospital Act and Your Community. Washington 25, D.C., Federal Security Agency, U. S. Public Health Service, Division of Hospital Facilities, 1947. 5½ by 8 in. 16 pp. illus. Single copies gratis.

Here is a small booklet explaining in simple terms the Hospital Survey and Construction Act, what it is, and how it works. Intended to help any group or community interested in building a hospital, it tells how to go about getting federal aid, and presents some of the statistics which brought the Act into being in the first place.

ARCHITECTURAL

RECORD

PLANNING, TOO, IS FOR PEOPLE

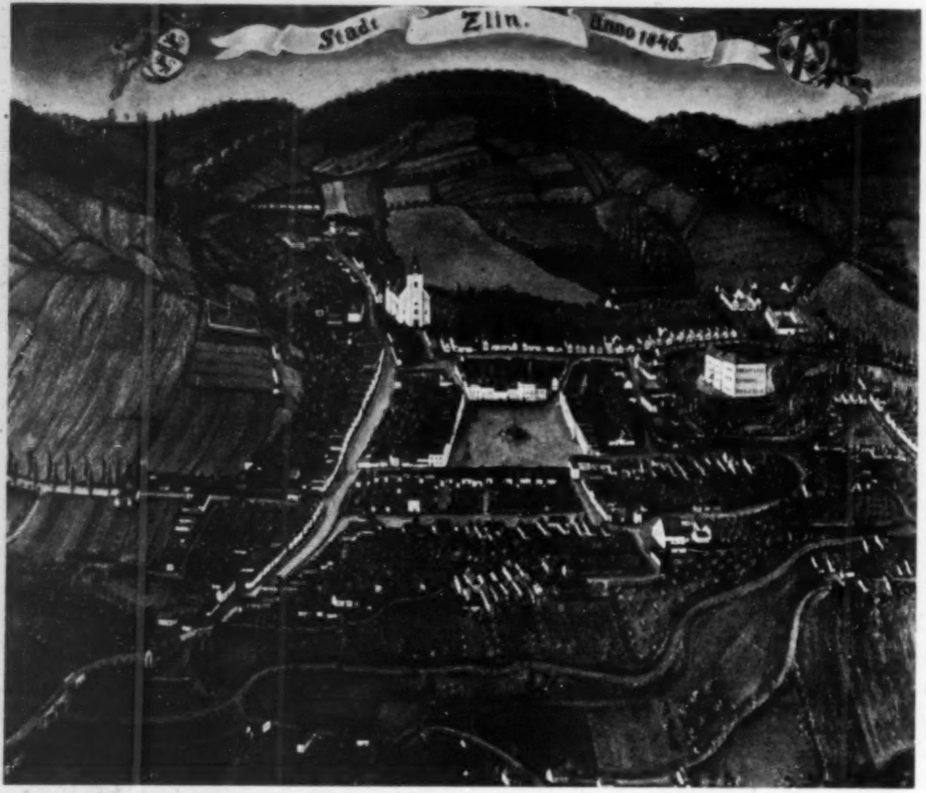
Perhaps one of the most significant trends in architectural and city planning thought is the recognition of the needs and desires of *individuals* as well as groups, classes or masses of people. There is a return from grand concepts of city planning as pleasing linear plan patterns to a testing of those esthetic abstractions in terms of human reactions in use and in three dimensions. The imposed-from-above pattern, even when produced by thoughtful and competent planners, may be found lacking in its desired end result of contributing fully to the happiness and richness of life of the individual citizen. This has been brought out more and more forcefully by the writings of Churchill, Hudnut, Sert, Gideon, Burchard, Kump, and a host of others who are both objective and human in their approaches.

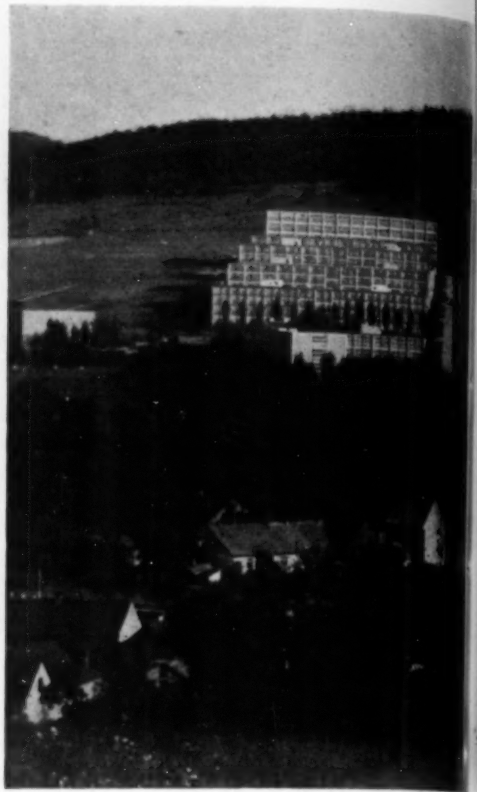
Then too, the tenor of the recent Princeton Conference and of the more recent Columbia Conference on city planning placed greater emphasis on the spiritual and esthetic needs of individuals than on the materialistic. The latter type of planning in its insistence on order, may become hard, mechanical, monotonous, drab regimentation if it leaves out (as it too often does) the opportunity for the spontaneous, the joyous, the accidental. Even though the plan may analyze scientifically and be functionally compartmentalized on statistics, and prove financially economic — it may leave out elements essentially human that contribute to the sense of healthy, happy well-being desired by the individual.

A case in point is the replanning of St. Dié (ARCHITECTURAL RECORD, October '46). One factor which the grand plan of Corbusier may have overlooked in proposing tall apartment houses is the intense, ingrained, traditional desire of the individual inhabitants to be close to the earth, to have their own gardens to tend and to view with pride and inner satisfaction from their windows.

In perusing the interesting and stimulating plans of the development of Zlin on the pages immediately following, it may be well to keep these factors in mind and to judge critically, weighing theoretical planning ideals against probable emotional and social reactions, orderly pattern against individual freedom, unity *vs.* variety. It may be that the human desires and satisfaction of the individual community dweller can be fulfilled and integrated in the plans, as well as the desires of the community planner for all-over orderly pattern. After all, planning is for people, and people are individual, and very human, beings whose thoughts and habits are as important as traffic surveys and land values.

Kenneth K. Stowell
EDITOR





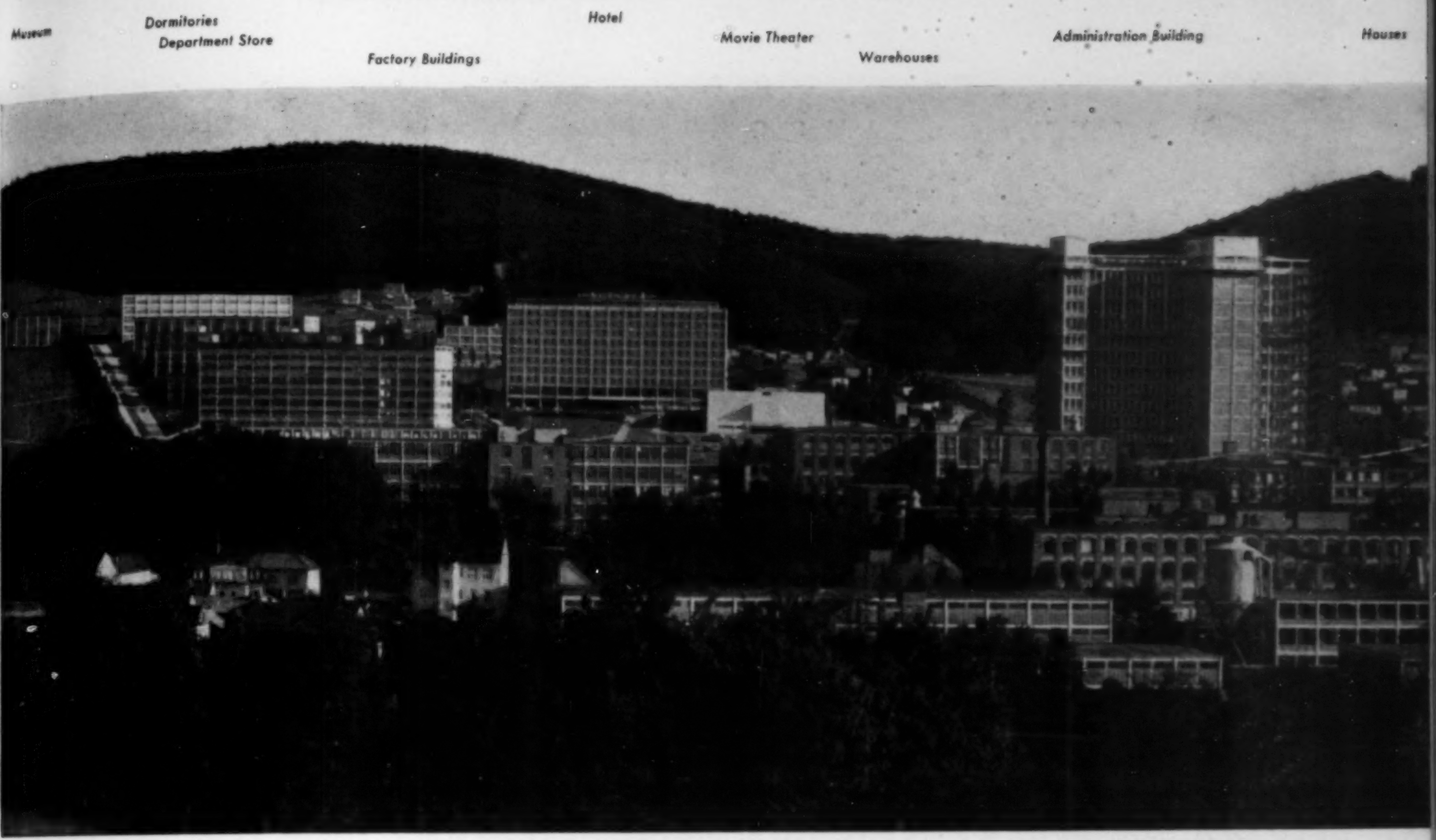
FROM A QUAINT PROVINCIAL TOWN, ZLIN, CZECHOSLOVAKIA, DEVELOPED INTO A COMPLETELY INTEGRATED INDUSTRIAL CITY BECAUSE—

THEY

Zlin during the bombardment of factories, November, 1944

IN THE HEART of Moravia, surrounded by hard-yielding farmland, where the back of the horse and the back of a man are still the prime sources of energy, and the common plow is the first tool, lies the city of Zlin. At its outskirts the rough country road turns into a concrete highway, over which one rolls into a lively twentieth century industrial city. Here is electric power, here are assembly lines turning out cheap shoes, here are prefabricated houses and multi-story buildings raised by efficient, standardized construction methods. Most exciting of all, here is modern graciousness and decency. Here is order. The green of surrounding hills reaches into the heart of the city. Meaningfully proportioned outdoor spaces heighten the feeling of integration between places of work, decent living quarters, and other components of community life. Here is the achievement of advanced methods of planning and construction applied to industrial plant and housing alike.

Until the turn of the century, Zlin was just another of the provincial towns in a poor hilly country. Its phenomenal development started when Thomas Bat'a, the "Czech Ford," foreseeing the market possibilities of



PLANNED IT THAT WAY

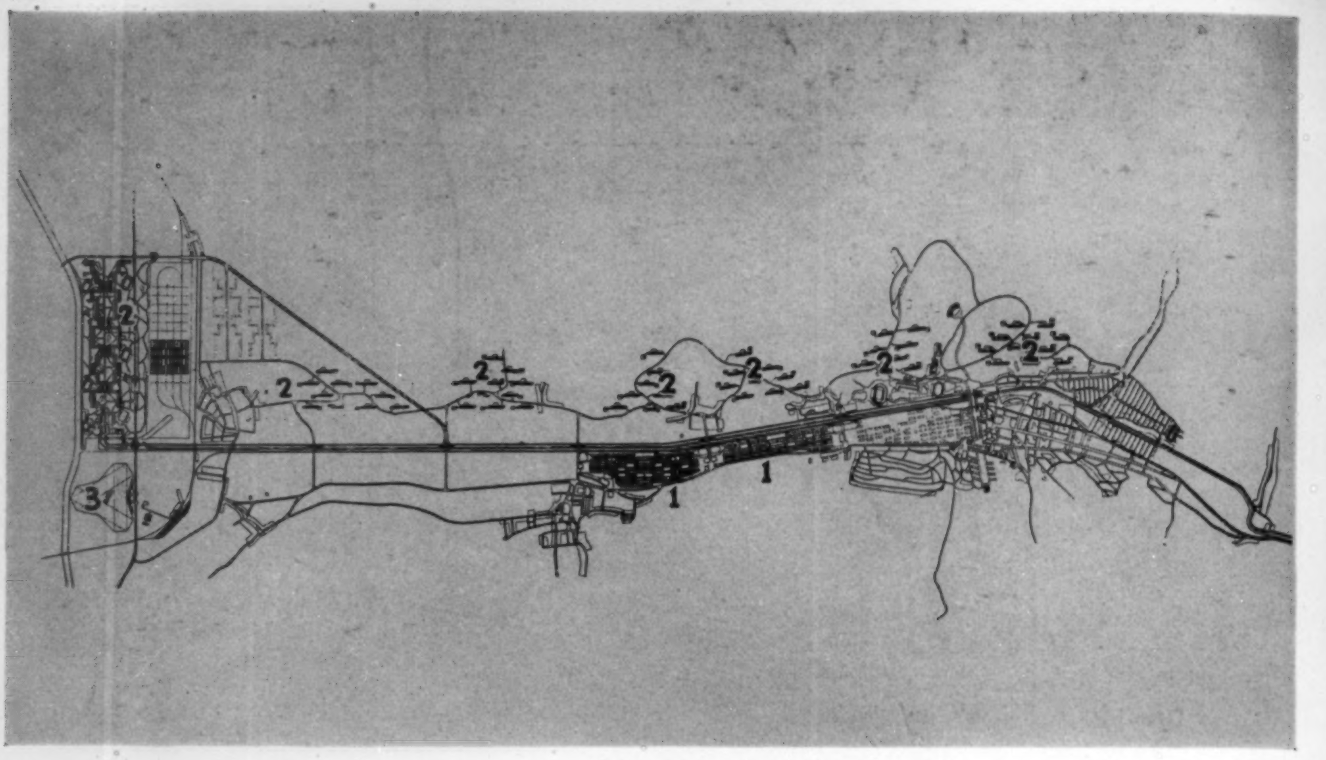
By JAN POKORNY and ELIZABETH HIRD

a cheap shoe, began to modernize and expand his family's shoe workshop. By the time of the first World War the factory was employing 1500 and working to capacity. Turning war profits back into the industry, studying industrial methods, not only in middle Europe, but in America and England, Bat'a continued the rapid expansion of the firm, and by 1922, during the general depression, he was able to reduce the price of his shoes by half. Soon there was a Bat'a retail store in every hamlet in Czechoslovakia, and the firm's products began to penetrate abroad. The plant grew enormously. Auxiliary workshops were founded for the manufacture of shoe machinery, textiles, and chemicals, and a few years later the company branched out into the hosiery and rubber tire industries.

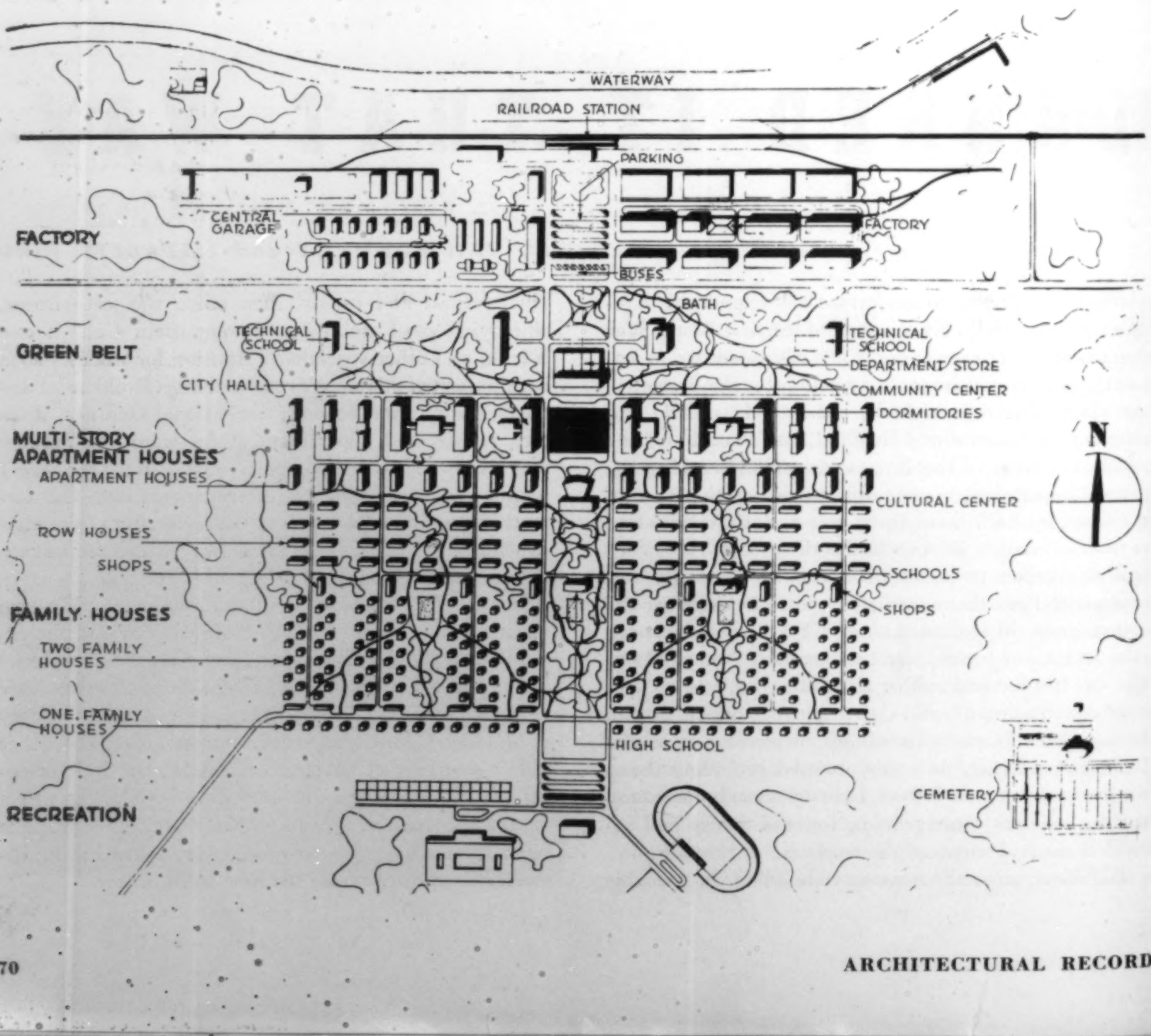
The increasing numbers of employees drawn to Zlin by the Bat'a Works necessitated an increase in all the facilities for living. As a step toward providing these, the company opened food industries and consumes, and by efficient management, lowered prices and increased the real wages of the workers.

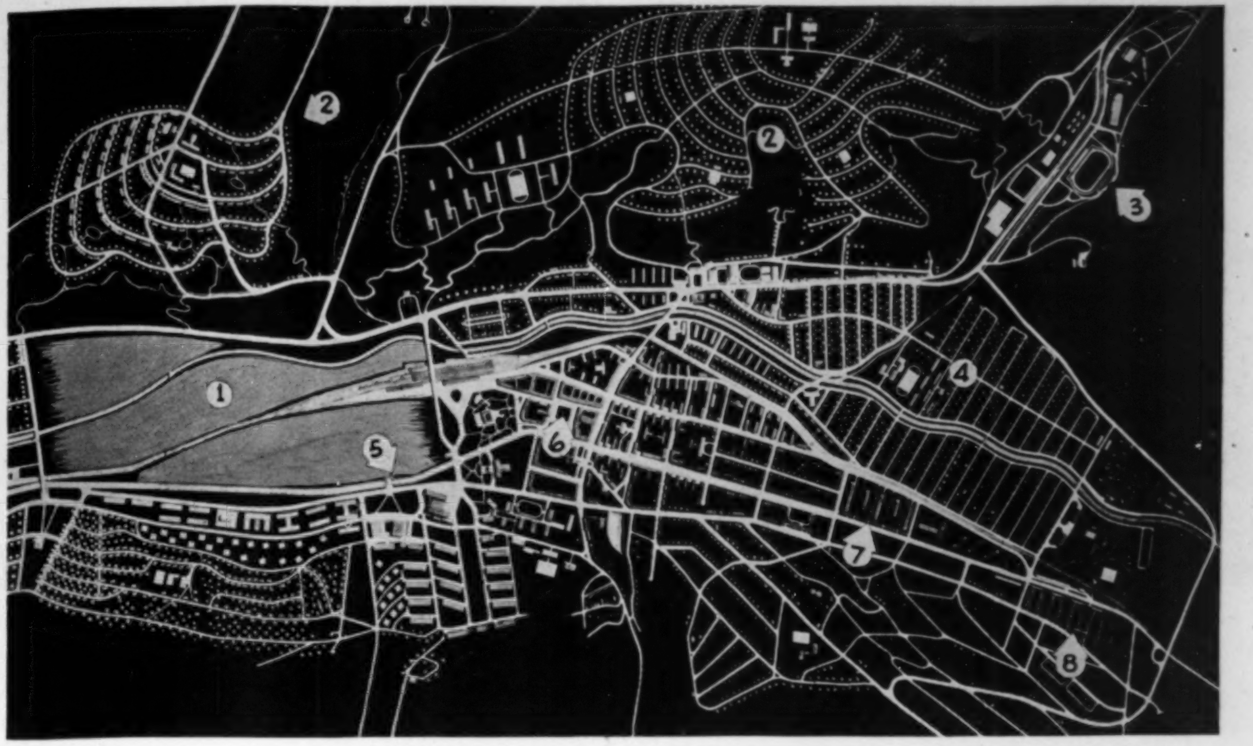
To coordinate all necessary building, a sizeable architectural and construction office was established, employing good architects, among them Gahura and Karfik, and other specialists. Housing for workers soon became part of this office's responsibility. Residential districts, dormitories, schools, recreational facilities, theaters, hotels, and department stores were built. These were all owned by the company, just as were the power plants and various means of transportation. The far-reaching company ownership, while making the worker dependent on the firm in many ways, had the advantage of making coordinated planning possible.

For Zlin's first new residential districts, Western garden cities in England and Holland provided the examples. Isolated one to four family units were placed in unsubdivided greenery. The design of the two-story brick houses was chiefly dictated by strictest economy of building. Considerations of economy also led to rather monotonous street patterns and little regard for orientation. But on the whole this kind of housing was a great improvement over the living standards of workers in middle Europe. Young people were housed in multistoried dormitories near the new town center.


2
2
2
2
2
2
2
1
1
3

Le Corbusier's plan for Zlin and its extension along the valley. Numerals refer: 1, to extension of factories; 2, to additional residential apartments; 3, to a proposed airport. Compare with later plan, the enlarged section on the opposite page Below, diagrammatic plan showing a proposed pattern for an industrial center such as Zlin. J. Vozenilek, planner, 1941


WATERWAY
RAILROAD STATION
PARKING
CENTRAL GARAGE
FACTORY
FACTORY
BUSES
BATH
TECHNICAL SCHOOL
GREEN BELT
TECHNICAL SCHOOL
DEPARTMENT STORE
CITY HALL
COMMUNITY CENTER
DORMITORIES
MULTI-STORY APARTMENT HOUSES
APARTMENT HOUSES
N
CULTURAL CENTER
ROW HOUSES
SHOPS
SCHOOLS
SHOPS
FAMILY HOUSES
TWO FAMILY HOUSES
ONE FAMILY HOUSES
HIGH SCHOOL
CEMETERY
RECREATION



Master plan of Zlin, 1947, showing: 1, site of factory; 2, proposed residential sections; 3, new recreational area; 4, old residential section; 5, new town center; 6, old town center; 7, new multi-story apartment houses; 8, new three-story apartment houses. F. L. Gahura, V. Karfik, V. Kubecka, A. Vitek, J. Vozenilek, architects and planners

The rapid expansion of the industry continued even after Thomas Bat'a's death in 1932. The company was faced with the problem of enlarging not only the plant but the living facilities for the increasing population which the factory attracted to Zlin.

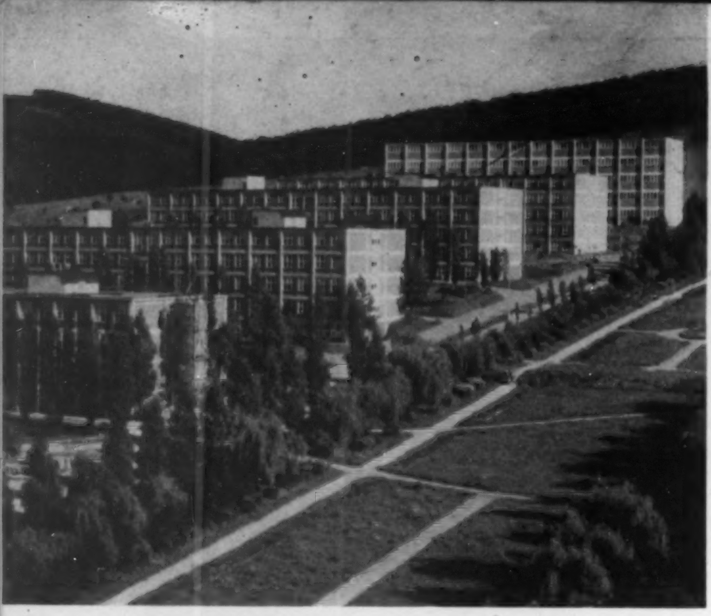
In 1935 Le Corbusier was engaged to prepare a design to solve this problem. Le Corbusier's plan designated slopes with the desirable southern exposure along the adjacent valley for the new residential sections. But at this time expansion in Zlin met with insurmountable difficulties. Land speculators demanded exorbitant prices for these very slopes. This obstruction, together with a shortage in water supply for the factories, prevented the company from further centralizing production in Zlin itself, and started the development of independent production units in various distant parts of Czechoslovakia. Similar units were being established abroad to overcome tariff barriers. These were all designed in Zlin, complete with housing, social, recreational, and cultural community facilities for workers.

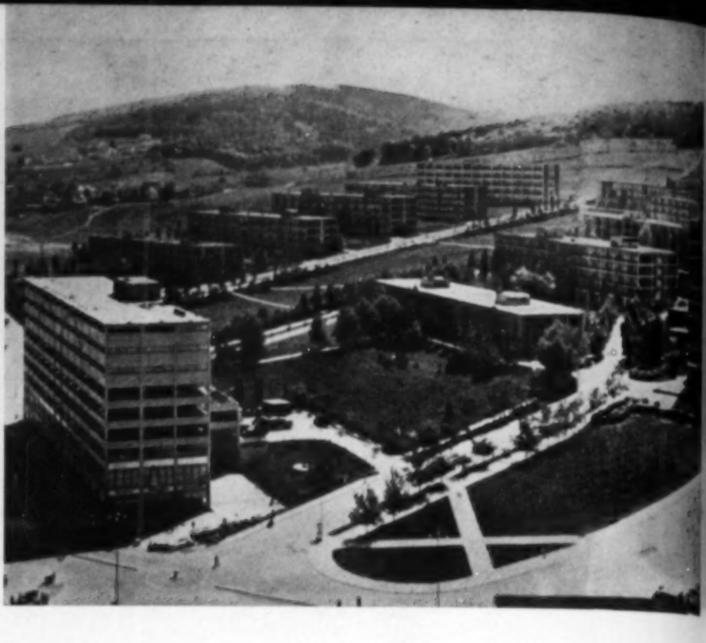
The volume of work led the planning division of the Bat'a Works to systematic city planning studies. The principles, progressively evolved from these studies, had a very high standard, as is evident from the plans of some of the more recent industrial communities.

The residential sections are limited in size so that workers can reach their place of work comfortably by foot. If a greater number of workers is needed in a particular community, the percentage of apartment houses in relation to individual units and row houses is increased. Unmarried workers are housed in dormitories. The civic center is placed between these dormitories and the family residential area. Schools and small shopping elements are spotted throughout the community. A green belt separates the factories from the residential neighborhoods. Recreational facilities are amply provided and located near continuous woodland or on a body of water. The sites of such industrial units are usually near main rail and highway arteries.

After the second World War, the nationalization of the big industries in Czechoslovakia and the new land-use legislation reopened the question of further developing Zlin itself. With the land needed for workers' housing made available, and a dam for industrial water supply projected nearby as part of the nation's two-year reconstruction plan, further expansion became feasible. A new regional plan was developed which provided for a partial reorganization of the industry. The planners, making use of the experience accumulated in designing such decentralized communities as we have described, located subsidiary industries, manufacturing half-products for the Zlin plant, along the short valley between Zlin and the city of Batov where another Bat'a factory already existed. The main and supplementary plants are to be connected along the short distances which separate them by railroad and highway.

This chain-like arrangement facilitates the distribution of the corresponding residential communities along the valley, maintaining the desired direct relationship between living quarters and places of work. Housing for the workers will be set on the generous and sunny hill slopes above the factories. Although each factory-home group is to have its own communal facilities, Zlin will serve as a unifying cultural and social center to the entire region, and the increased population will make possible the extension and enrichment of the cultural facilities there. By a judicious use of this short valley region the planners have retained the economic and cultural advantages of concentration, at the same time obtaining the benefits of living close to nature.





Above, dormitories for student workers range in tiers up the hillside fairly close to the central plaza (shown in the center above). Below, the Administration Building, 1938, noteworthy for its straightforward expression of the standardized construction used for all major buildings, as described in text

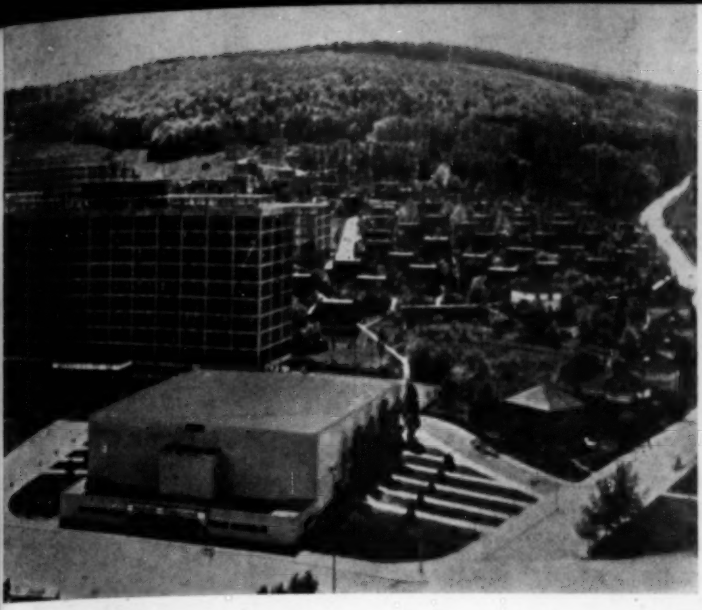
HOUSING

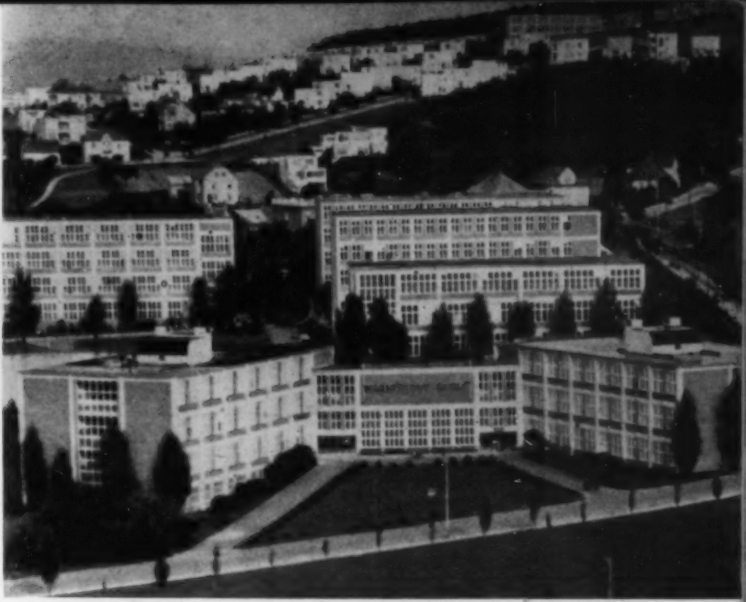
As part of the same plan, the residential sections of Zlin proper will be supplemented with new neighborhoods in the center of town as well as on the slopes opening to the south. Here some row and multi-story apartment houses, so far entirely absent in Zlin, will be built with the intention of providing not only single family and low row houses with their individual gardens, but also a variety of apartments. By comparing the newly proposed sections, shown at the top of the master plan, with the older ones near the center and in the southwest corner of Zlin, one can observe encouraging progress made through years of planning.

The house type most frequently used until the end of World War II was the two-family wall-bearing brick unit referred to in the discussion of the first residential development of Zlin. Toward the end of the war experiments were started in constructing these houses of prefabricated hollow and ribbed concrete slabs on a mass production basis.

At the end of the war sharply increased building costs and the nationalization of the Bat'a company brought a fundamental revision in the company's entire housing program. Now, in close accord with Le Corbusier's suggestions of 1935, the planners favor the erection of an increased number of multi-story apartment houses, surrounded by park areas. These large apartments can be built more economically than detached houses, and thereby make possible an increase in modern equipment for each unit, and thus improvement in the whole living standard. Several types of such apartment houses are planned, varying primarily in respect to the number and kinds of communal facilities offered. In the future, too, all apartment houses will be supplied with heat from a central power plant.

The simplest of these multiple family houses is already in construction. It is a three-story walk-up of wall-bearing brick designed by Architect Karfik in 1946. Off each stair landing are two apartments having





much better plans and bigger rooms than the original detached houses. As a further improvement, groups of these buildings are to be provided with central laundries and nurseries.

A second type of apartment house, eight stories high, of the standard reinforced concrete frame construction, with elevators and a central corridor, will have the common facilities of nursery and restaurant in the building. But each apartment unit will have its own amply equipped kitchen with built-in cupboards and refrigerator, both welcome innovations in this part of Europe.

The third type, which has a more completely collective character, is now in process of being designed. Because of the change in living patterns which such a building implies, one experimental unit probably will be erected first to test its acceptability. The program for this type is based on the results of a provocative architectural competition for the collective housing of workers of a large industrial plant in the district of Most. The drawings entered in this competition by Zlin's chief planner Architect Vozenilek may serve to illustrate this type of building. All the common facilities, central laundry, workshops for tenants and maintenance workshops, administrative offices, and the kitchen serving the central dining room are placed in a well-lit basement. On the first floor of the apartment element are common social rooms, club rooms, a lecture hall, shops, café. In a low adjoining building are a large restaurant and several smaller dining rooms for family affairs. Since the building is planned for families with employed mothers, connected with the building, in a lower wing, are a nursery, kindergarten, and school for pupils up to 14 years old. The children will stay in these schools during work hours and they can remain as boarders for longer periods when necessary. The house planned for Zlin will be smaller and will serve only 100 families as compared to the 300 of the Most project.

Above, center, about the main square are the department store (with cafeteria for young people), the hotel (a social center, with restaurant, café, billiards, etc.), and the movie theater which serves as a community auditorium. Above, the school group, 1929–35, F. L. Gahura, architect

Above, early standard houses "paid for economy with monotony," but each house had air, sun and its garden. Below, recent prefabricated concrete-slab houses; each provides for two families

STANDARDIZED CONSTRUCTION

One of the distinctive qualities of Zlin's town center and industrial section is its unified appearance. In part this is the achievement of essentially good planning and the imaginative relation of buildings to each other. In part it is due to the standardized construction used for all multi-story buildings.

The construction system consists of a basic framing of reinforced concrete. Round columns of a diameter constant throughout all floors are spaced at intervals standard for all buildings. The exterior panels consist, in most instances, of the brick that is used in the residential areas for houses, and of windows as required by the function of the building.

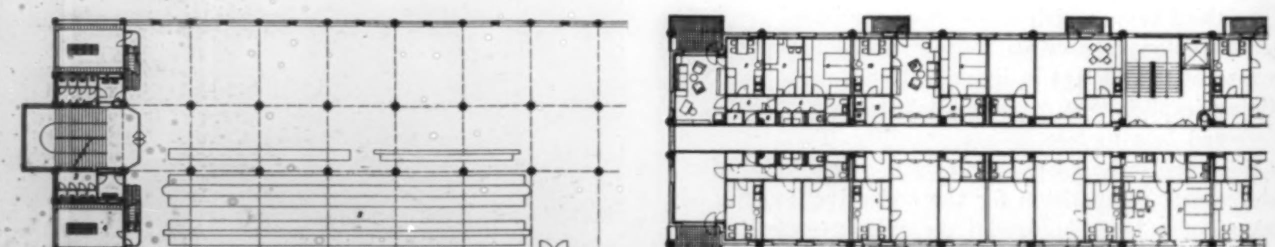
The basic frame has been used for all types of structure. Within the uniformity of this construction system, it is remarkable how clearly the purpose of each building is indicated and how much variety in spirit is achieved. Compare, for example, the school which has low, spreading masses and busy, low-silled small scaled windows, with the museum which stands elegant and quiet in the geometrical precision of its proportions, and the shimmering translucence of its glass sheath. Or compare either of these with the factory's workmanlike storage buildings, panels subdivided into large areas of wall below shallow window strips. The standard frame has also found interesting application in various retail stores of the Bat'a company. The shop in Praha with its big areas of opaque and transparent glass is a good example of its use in a commercial building.

Requirements of machinery layouts in the shoe factories and structural consideration determined the original column spacing of 6.15 meters in each direction. This proved excellent in warehouses and office buildings, and was used without difficulty for dormitories, hotels, community buildings and department stores. From the beginning the standard column spacing had to be altered in school buildings to achieve deeper classrooms and narrower corridors.

More recently, in connection with the extensive reconstruction of factory buildings destroyed by bombs in 1944, the entire structural system was restudied, and the spacing of columns slightly revised to suit new machinery layouts and more exacting plan requirements. The designers are now attempting greater flexibility of column spacing by working with a smaller module of 1.05 meters based on middle European brick dimensions. Column grids for the various buildings are laid out on multiples of this module. The improvements for industrial use are best illustrated by the half-plan of the new factory building erected after the war and designed by Architect Vozenilek (see plan upper left, below). The adaptability of the system to domestic requirements may be seen in the plan of the apartment units of M. Drafa's design for housing in Zlin (see plan upper right, below).

The columns of constant diameter have been successfully carried as high as 15 stories by Architect Karfik in the administration building built in 1938, the tallest reinforced concrete structure in Europe.

The standardization of the constructive system proved

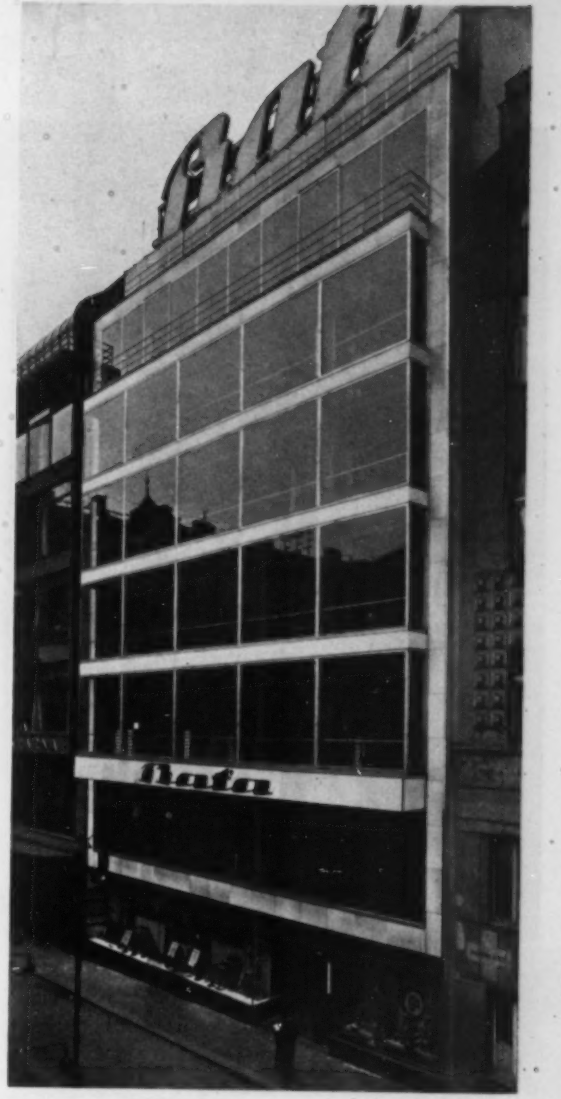


Four portions of typical plans showing the universality of the standardized construction system and its adaptation to buildings having different functions; top left, a shoe factory; top right, an apartment house; lower left, a school building; lower right, a hotel to be economical in terms of the manufacture of forms, of the designers' time, and of the actual erection time which was further speeded by the use of cranes to transport the metal forms and concrete mixture. The entire system of standardization immensely facilitated the rapid construction of the industrial and community buildings which the growing Bat'a Works required first in Zlin, and later in its satellite industrial cities.

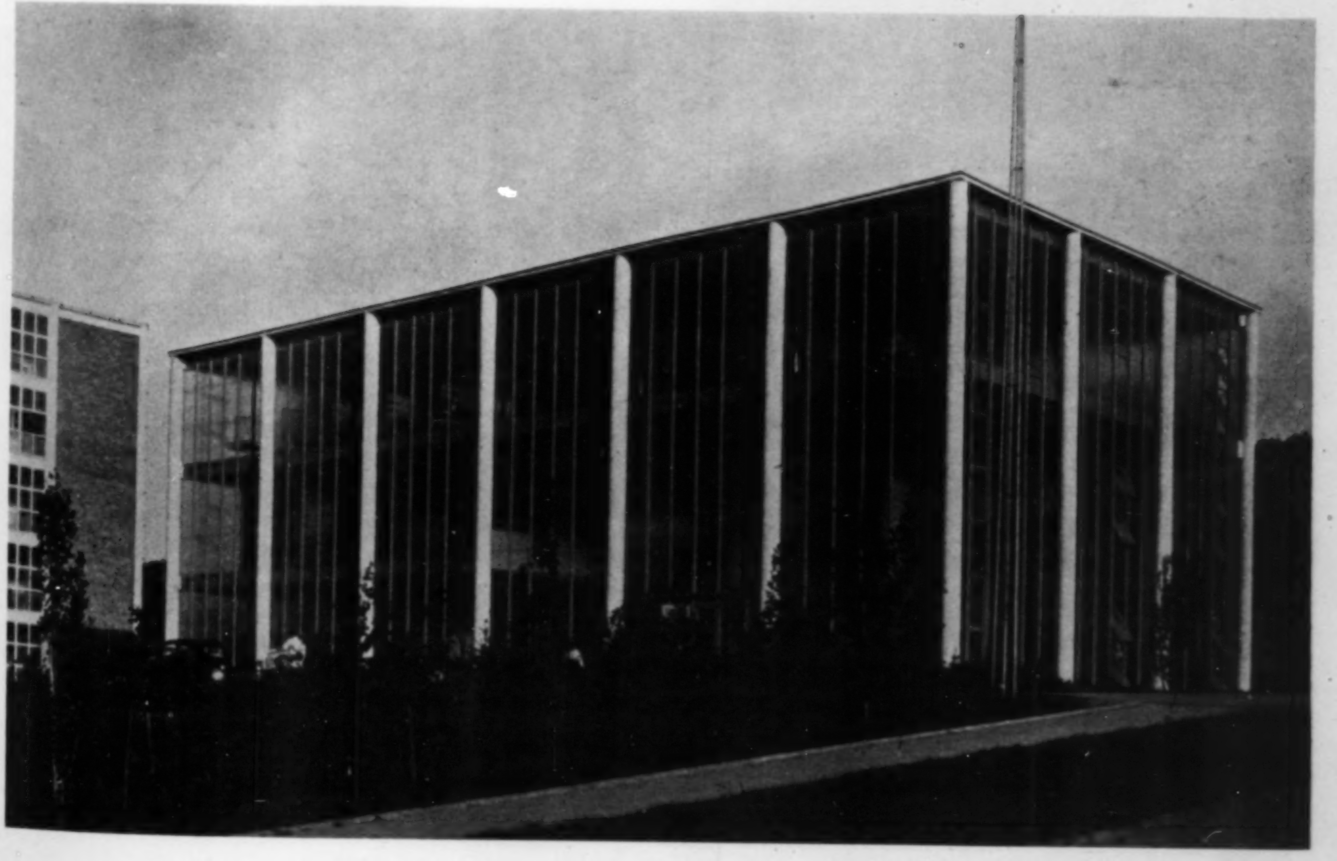
+ \+ \+

The coordinated planning studies made in the development of Zlin are proving of great importance to Czechoslovakia today, for they provide a rich pool of experience for the solution of similar problems facing other recently nationalized industries. The men struggling with the problems of regional and local planning are also finding the study of Zlin rewarding.

To the world at large, the city is significant as a rare example of thorough-going city planning. Instead of allowing Zlin to succumb in smoky ignominy to the sprawl and soot which we have come to associate with the cities of the industrial revolution, here men disciplined and exploited the tools of man's ingenuity for his more comprehensive welfare.



Right, the main retail store of the Bat'a firm in Praha, 1930, F. L. Gahura, L. Kysela, architects. Below, the museum, designed by Gahura in 1933, was built as a monument to the founder of the Bat'a industry

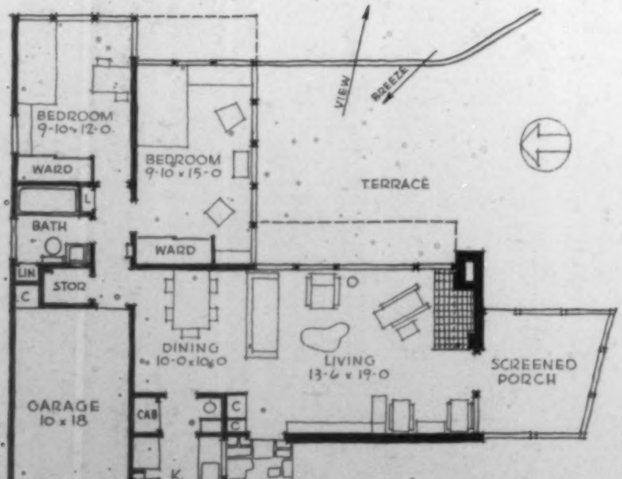


Ezra Stoller Photos

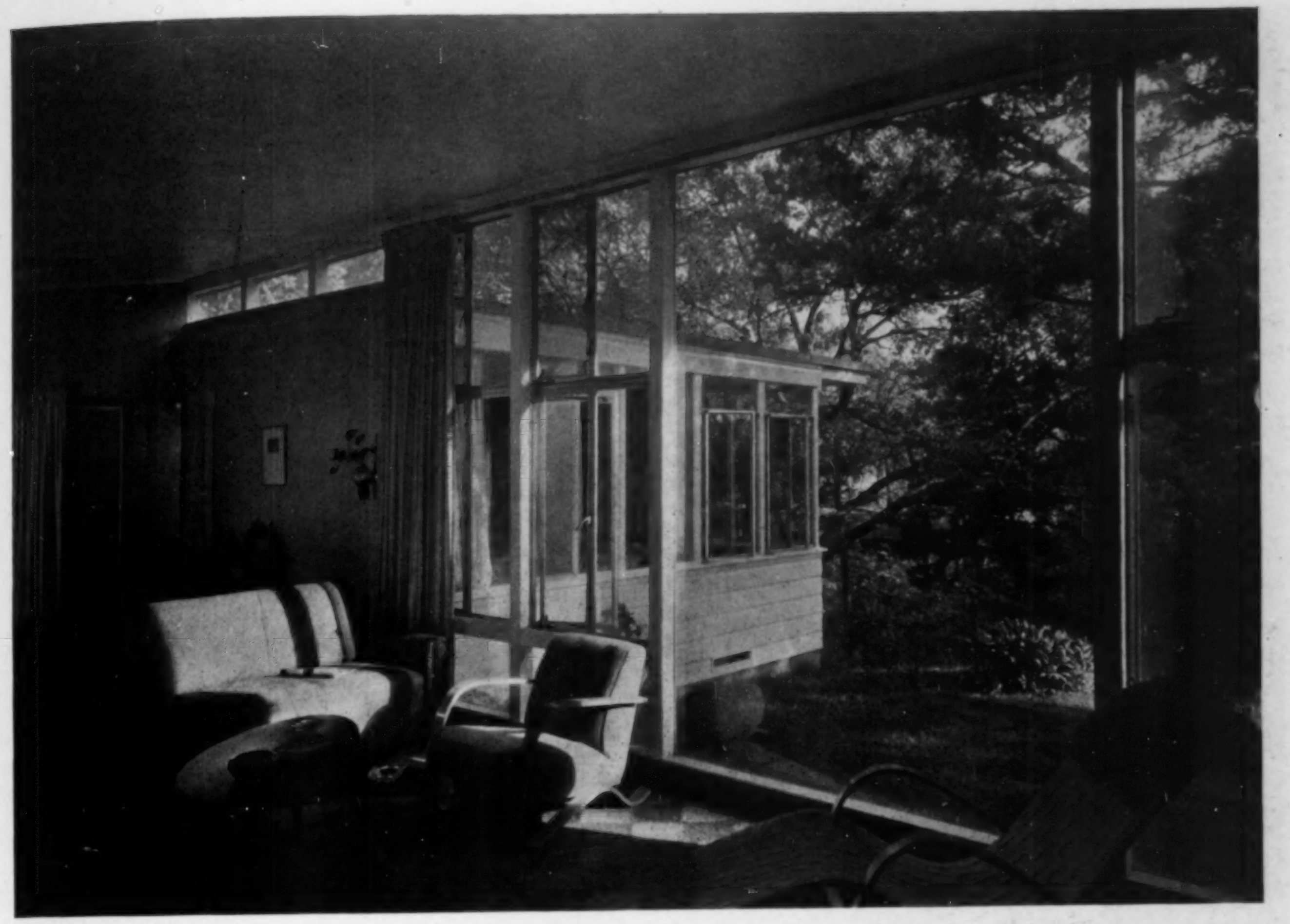
TREE-SET IN TEXAS

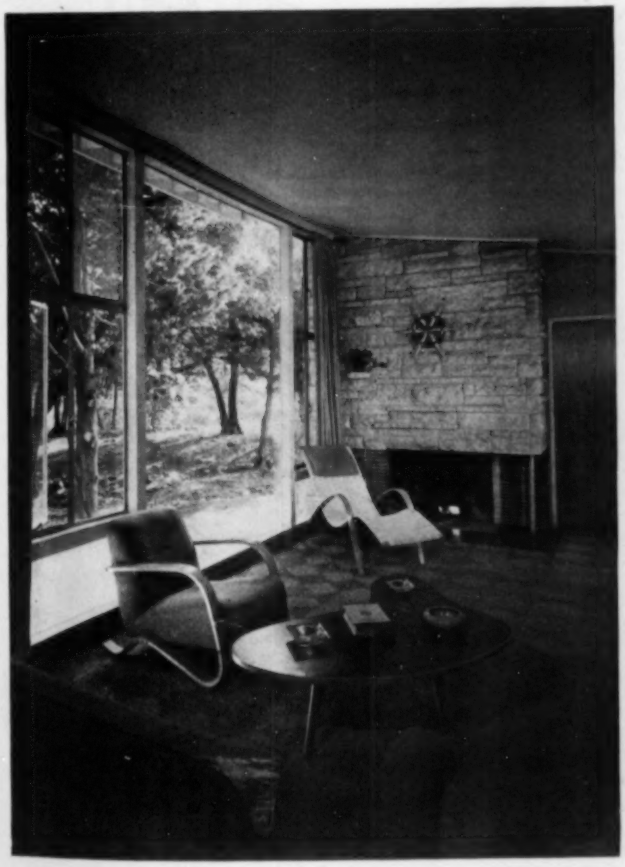
Home of J. Herschel Fisher, Architect,

of Wiltshire and Fisher, Architects, Dallas

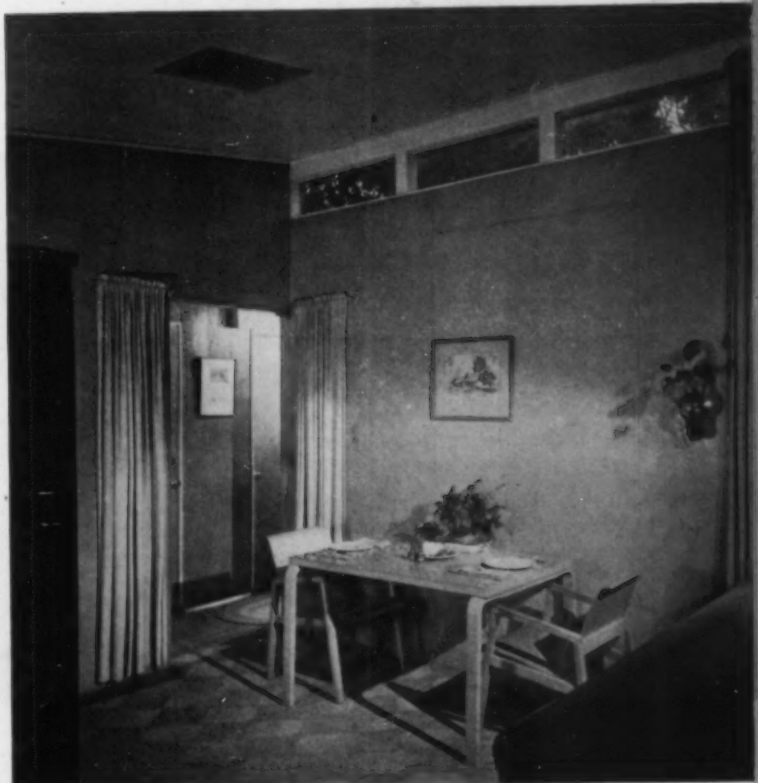

BEDROOM
9-10 x 12-0
BEDROOM
9-10 x 15-0
WARD
BATH
L
WARD
LIN
STOR
C
VIEW
BREEZE
TERRACE
DINING
10-0 x 10-0
LIVING
13-6 x 19-0
SCREENED PORCH
GARAGE
10 x 18
CAB
C
C
K.
7-6 x 10-6
PORCH

PREVAILING breezes and pleasing views are determining factors in the orientation and fenestration of the homes of the architects as well as those of their clients. The living room, with its screened porch, and the bedrooms, take full advantage of the cooling winds and the wooded landscape. On chilly days one can enjoy the open fire as well as the view of the out-of-doors. Entrance, kitchen and garage are to the west on the street side of the plot. From the garage one can enter directly either the kitchen or the living quarters. The living room ceiling rises toward the view and the combination of dining and living room areas adds to the spaciousness.

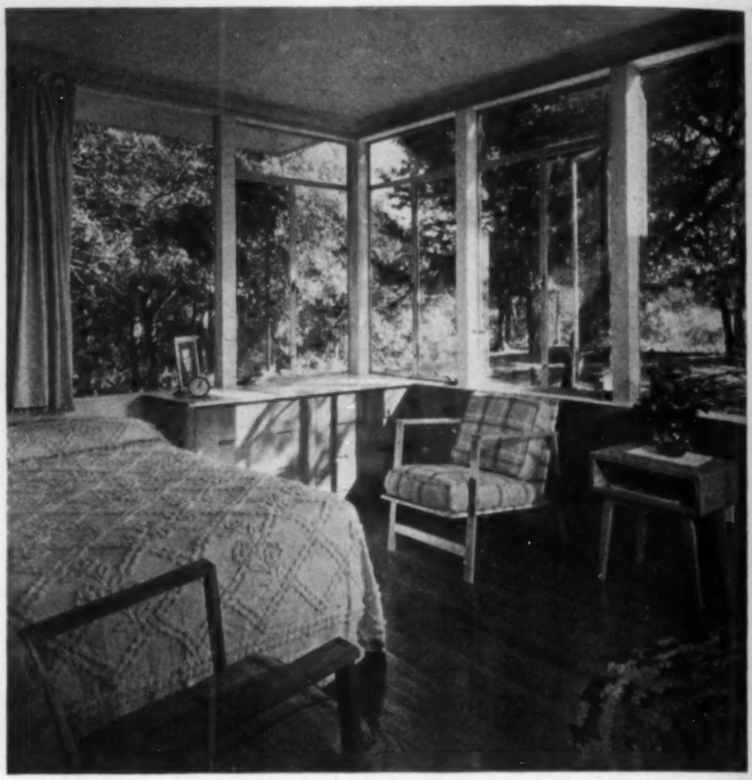


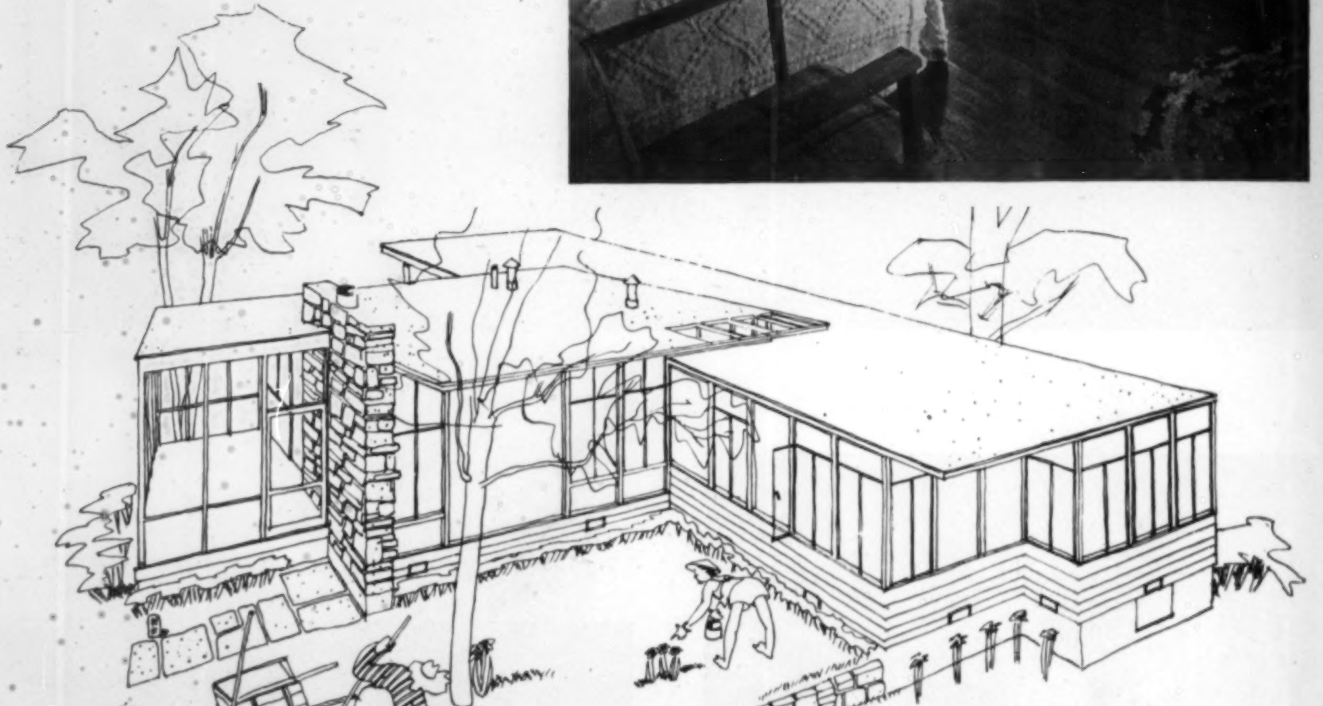


A floor to ceiling window invites an unobstructed view of the wooded hill, while side sash provide ample ventilation and the projecting roof shields the rooms from sun glare. Walls are of warm pine plywood, drapery gray, some chair upholstery blue

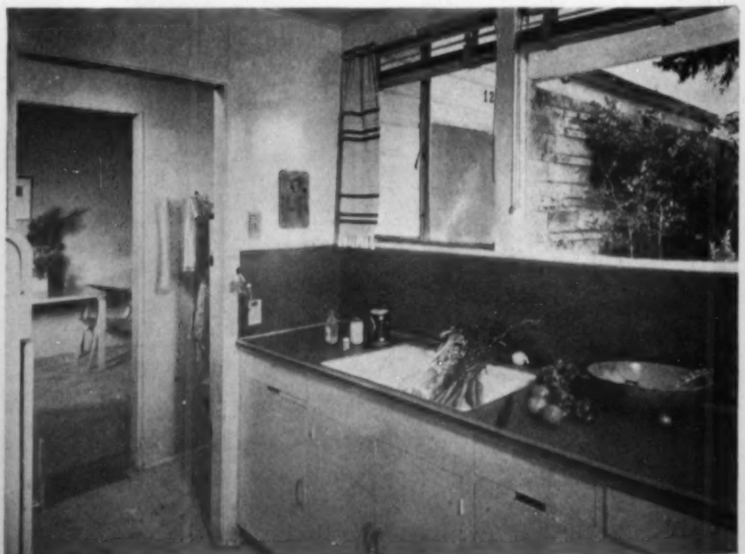


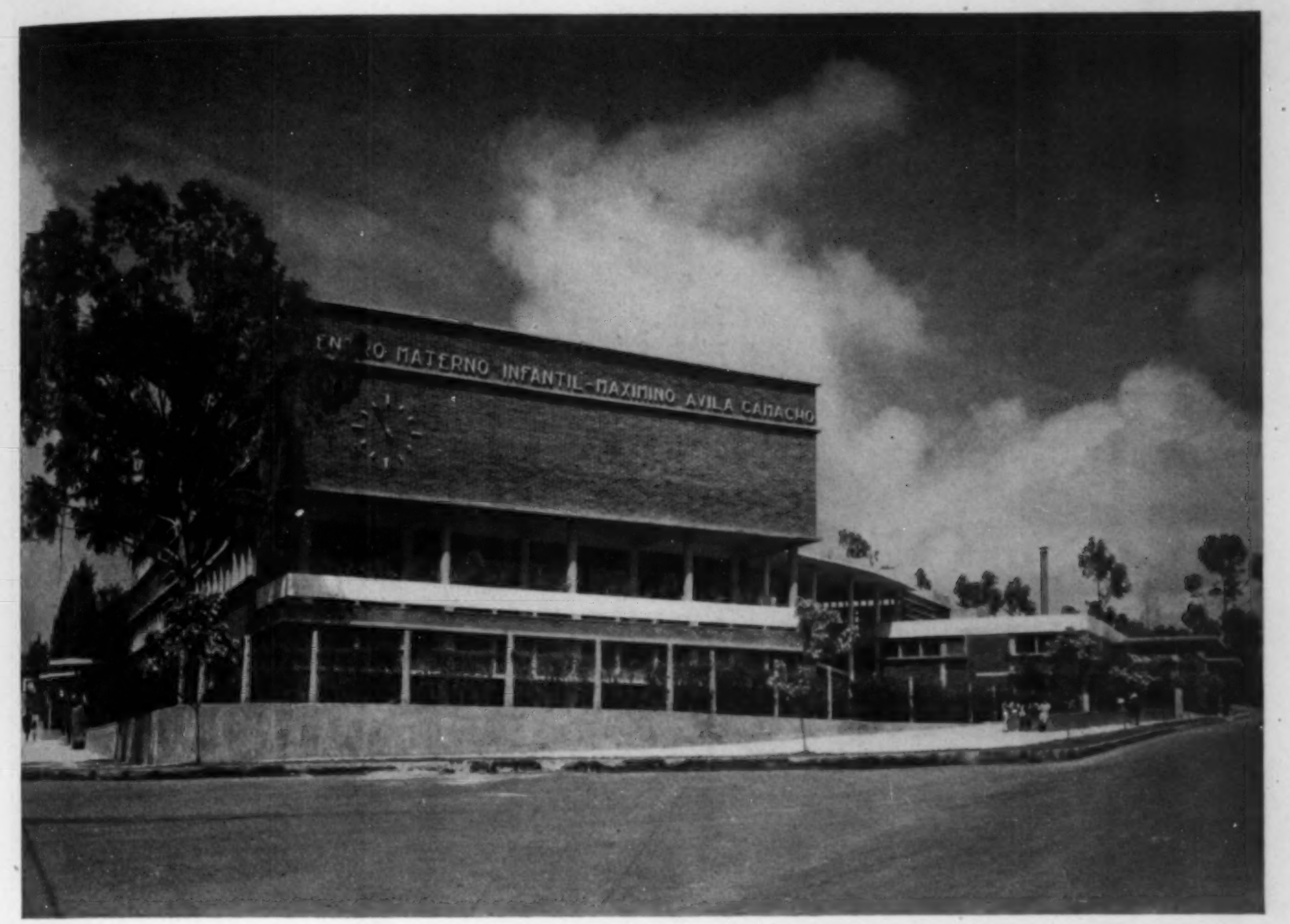
East and south sides of the master bedroom are glass enclosed above chair-rail heights, giving unusual spaciousness and airiness as well as a panorama of the countryside. Casement windows catch the cooling breezes. Convenient built-in features and furniture unify an uncluttered room





The architect's early treetop-perspective corresponds closely with the down-to-earth photograph at the top of page 76, except for certain human elements. The kitchen was designed to be as pleasant as convenient, flooded with light and air, planned to save both steps and tempers





1. *The polyclinic building in the foreground; main building beyond*

A CENTER FOR MOTHERS AND INFANTS

Tacubaya, D. F., Mexico

Enrique de la Mora, Architect

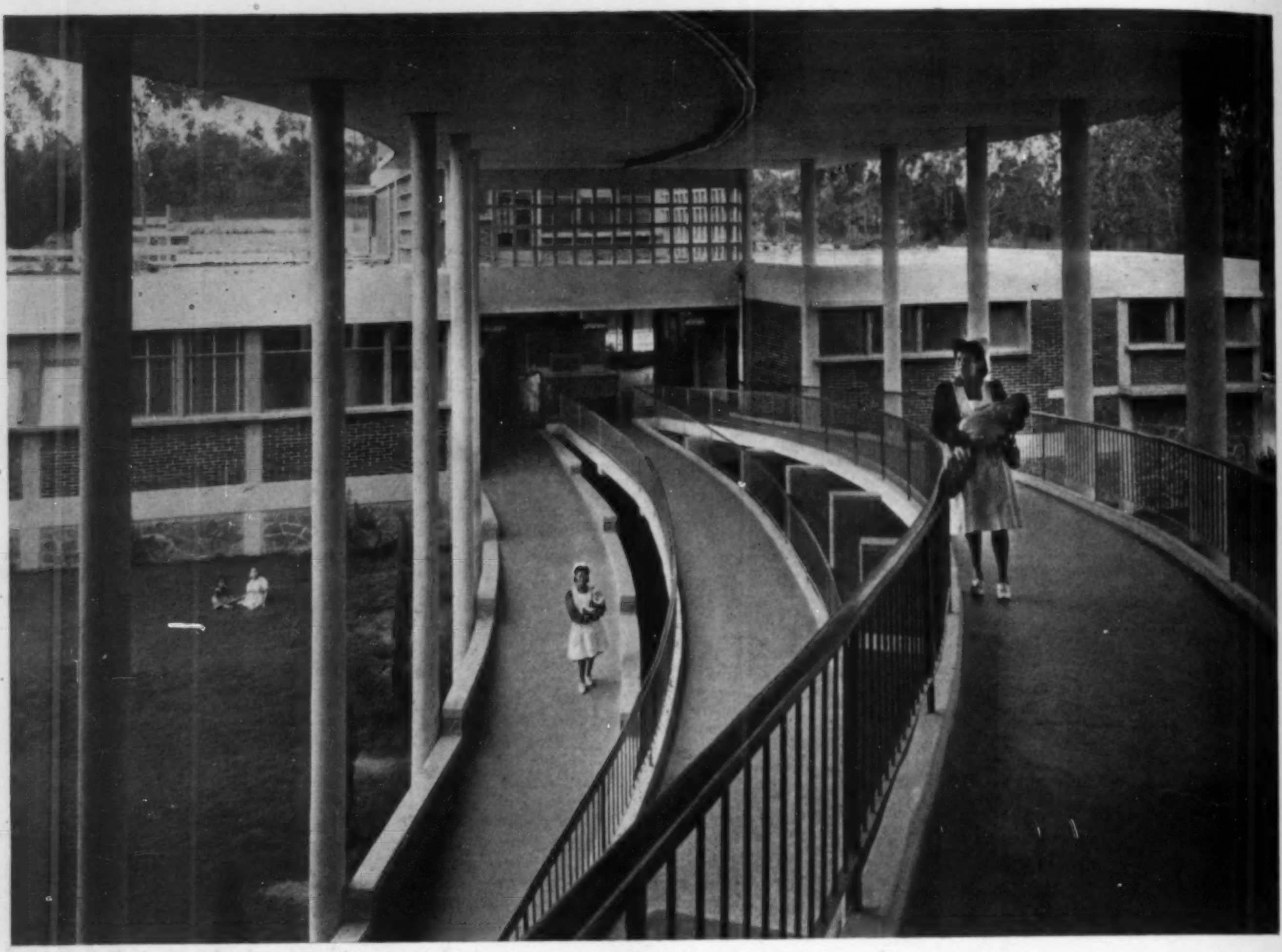
Mexico's most creative architects are devoting their talents to the country's comprehensive health program which includes all types of hospitals and health and welfare centers. The center at Tacubaya is one of the most unusual and interesting in both plan and structure. Its three functional divisions have been made three separate buildings connected by intriguing ramps and covered passages.

The polyclinic section is housed in a three-story building. The ground floor is devoted to dormitories for the temporary accommodation of mothers; the second floor provides for medical prenatal and postnatal examination and treatment, complete with laboratories and radiological equipment; the third floor provides various treatment rooms, laboratories and an operating suite.

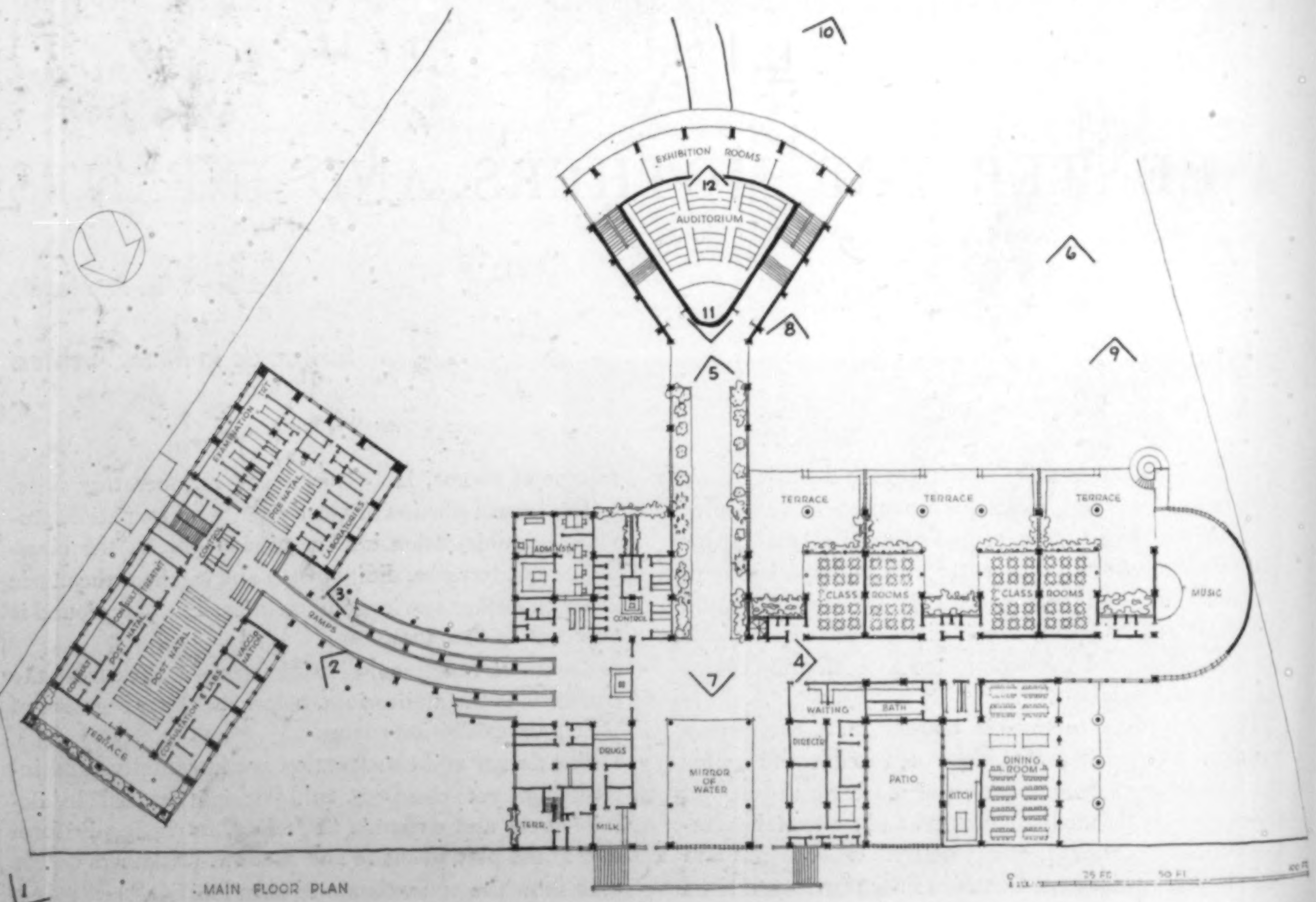
The largest portion of the center, with its patios, provides administration and admission offices, the classrooms and terraces, dining-room and kitchen, the music room and other services and utilities. The playground is adjacent to the classrooms.

The third functional division, straight back from the entrance, is the auditorium, below the outer segment of which are exhibition rooms.

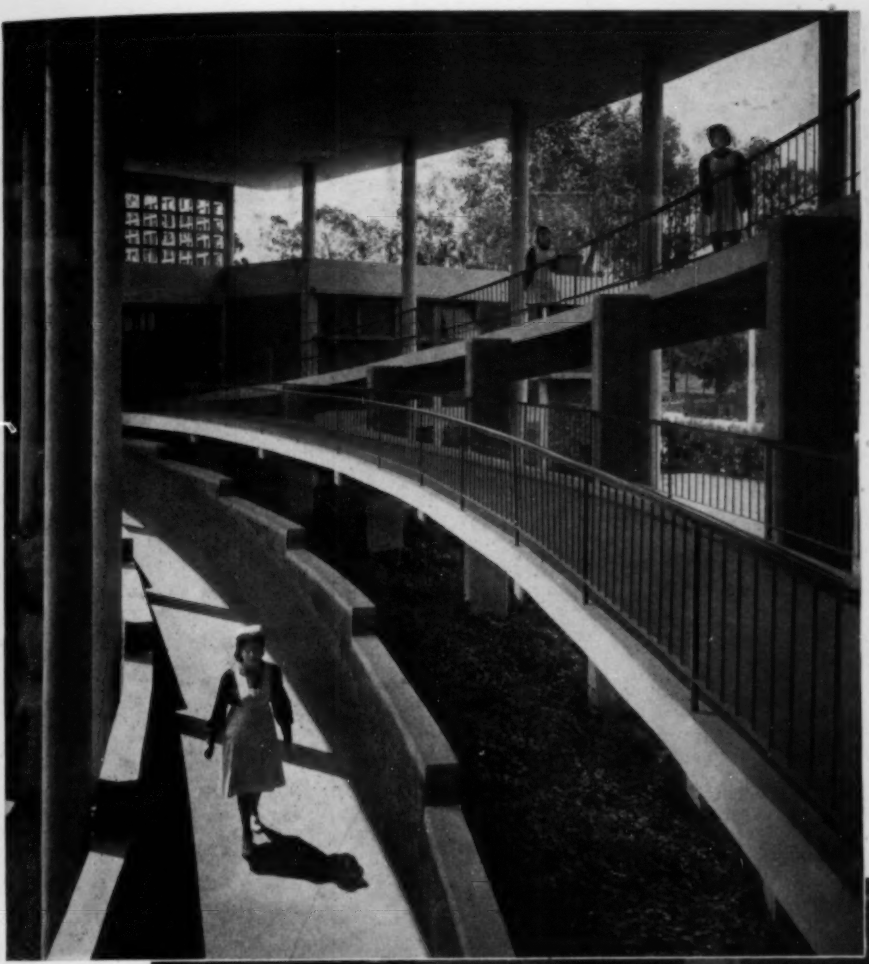
The design and construction are imaginative and interesting, yet clean-cut and straightforward in detail, lively and dynamic in feeling, intriguing in form and in the play of shade and shadow. (Numbers on the plan show the approximate camera locations.)



2. *From the main building three gentle ramps lead to the three floors of the polyclinic building*



10
EXHIBITION ROOMS
12
AUDITORIUM
11
8
6
9
5
EXAMINATION
TRT
PRE NATAL
LABORATORIES
CONTROL
TREATMT
CONSULT
POST NATAL
POST NATAL
CONSULT
VACCINATION
CONSULTATION & LABS
TERRACE
RAMPS
3
2
ADMINISTN
CONTROL
DRUGS
TERR.
MILK
7
MIRROR OF WATER
4
TERRACE
TERRACE
TERRACE
CLASS ROOMS
CLASS ROOMS
MUSIC
WAITING
BATH
DIRECTR
PATIO
KITCH
DINING ROOM
0
25 FT
50 FT
100 FT
1
MAIN FLOOR PLAN

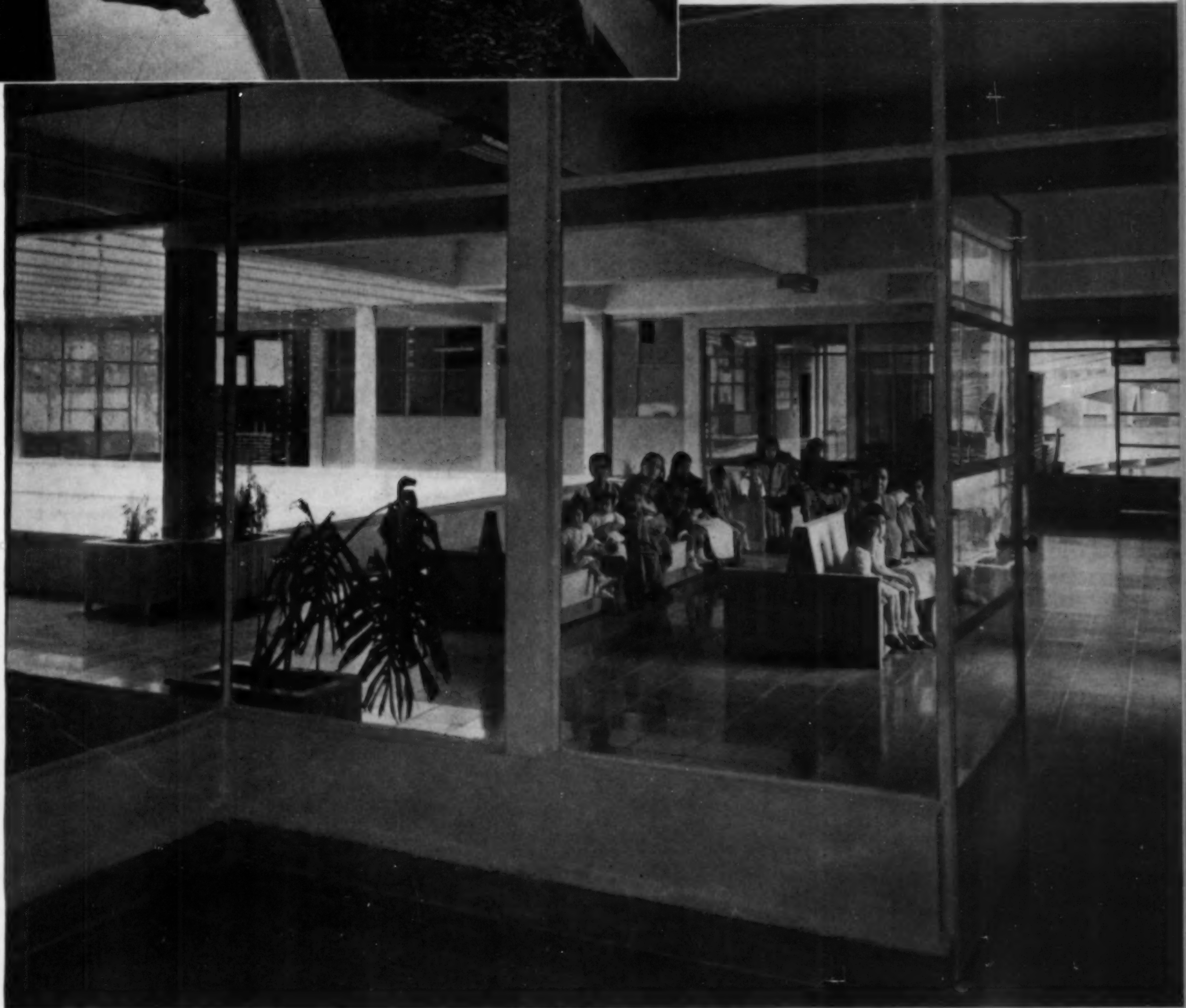


3.

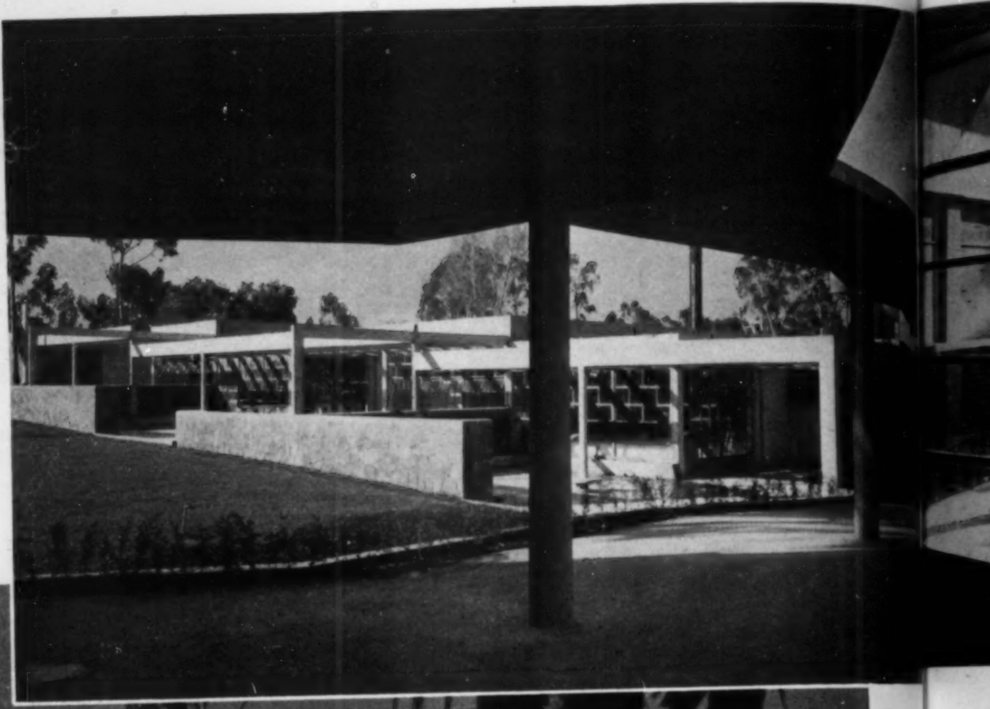
3. *Ramps to the upper floors of the polyclinic building cantilever from a row of center posts. Slender columns carry the sheltering roof slab*

4. *Below, mothers and children await admission before being directed to their proper rooms. Note light from reflecting pool at the left, glimpse of ramps through door at the right*

4.



5.



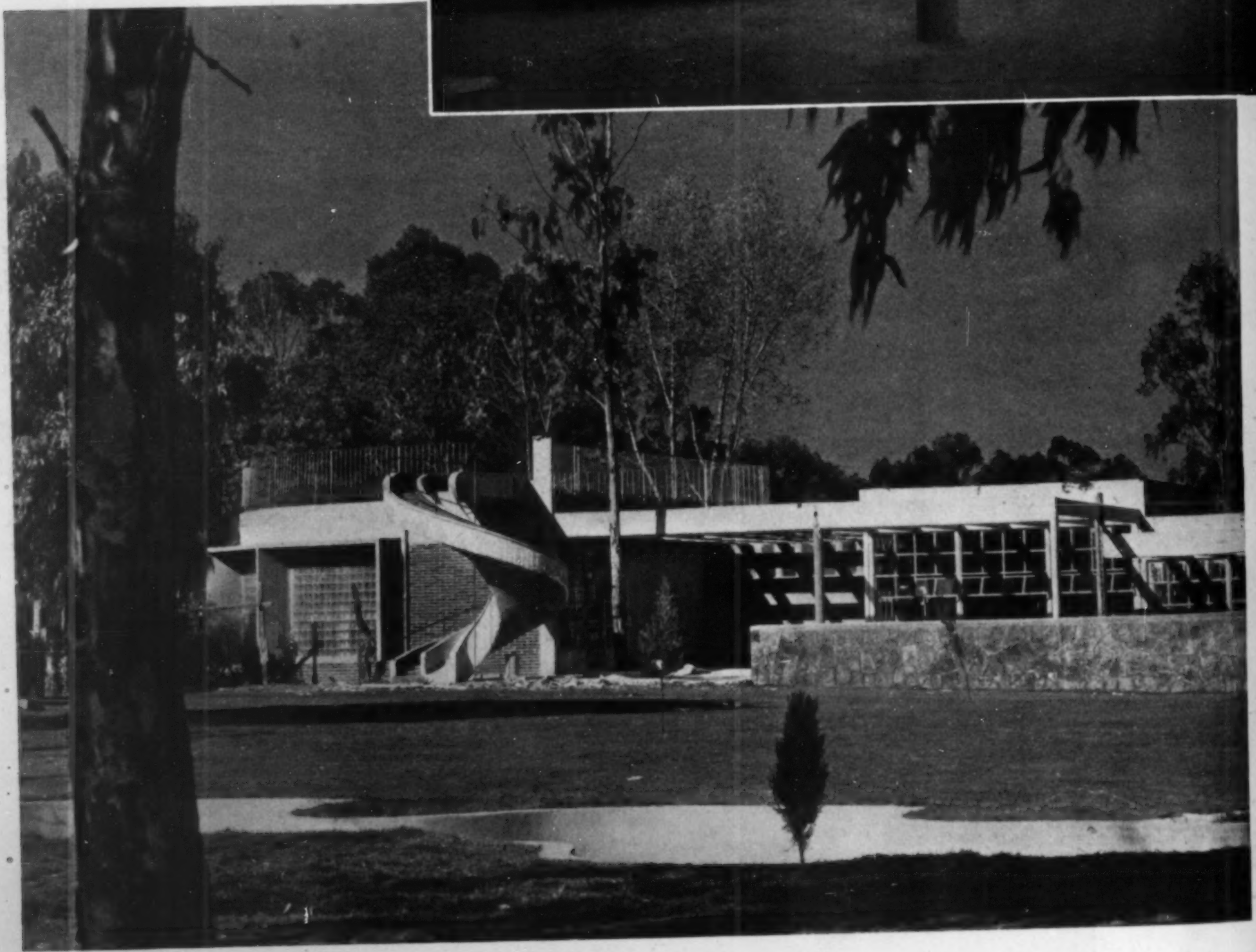
5. *Looking back from the auditorium walk toward the schoolroom terraces with their shadow-casting treillage*

6. *A free-standing stair and slide winds from the roof of the semicircular music room to the play yard*

7. *A step-roofed walk leads from the main building to the auditorium*

8. *Looking from the auditorium toward the main building*

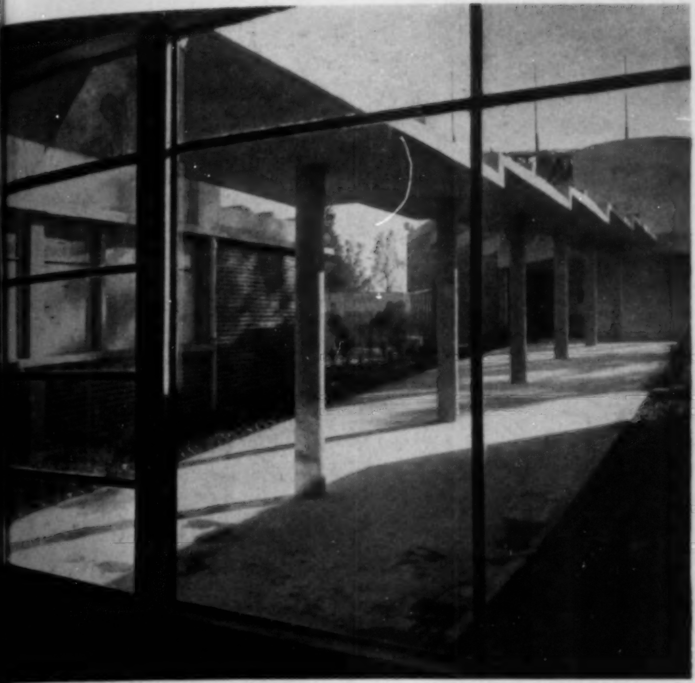
9. *Play area, sand box, slide and stair, terrace and classrooms mean much to the children, and mothers*



6.

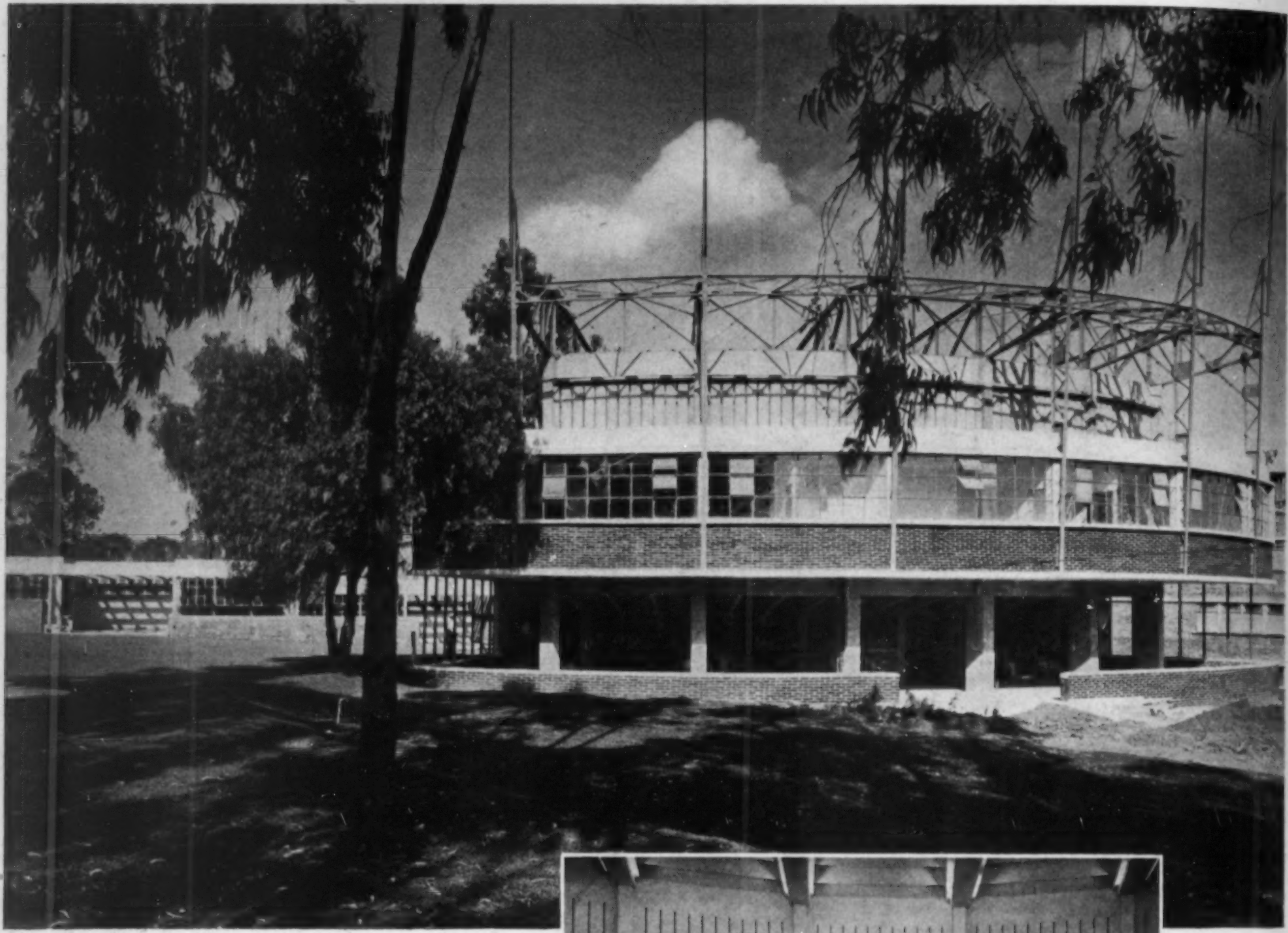
9.

7.



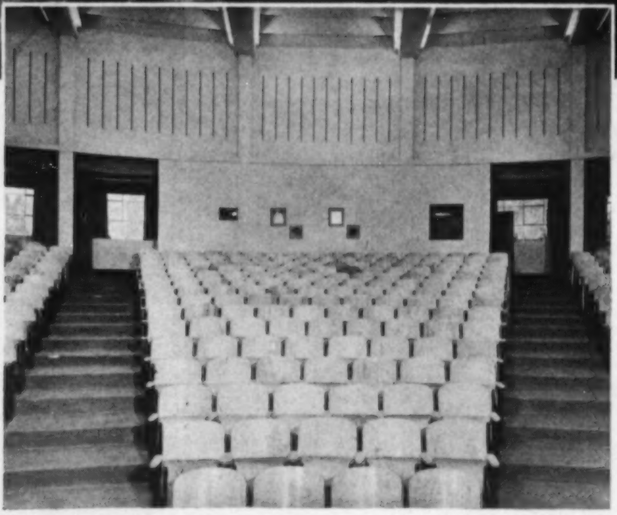
8.

9.

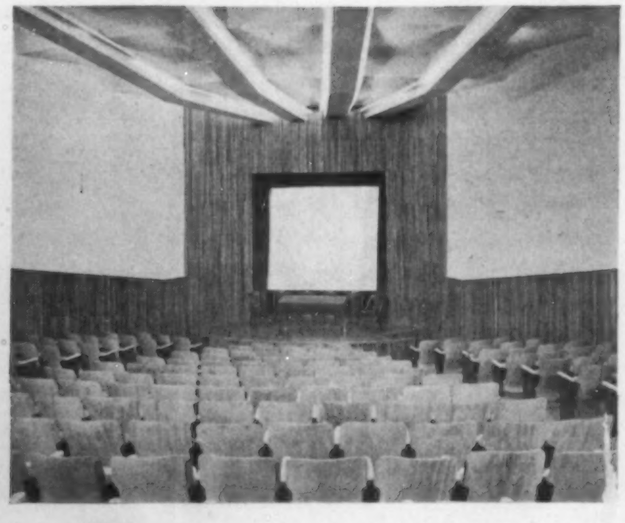


10.

10. *The auditorium is an interesting example of an exoskeleton in which the exposed structural elements constitute major design forms and produce unusual shadow effects. Problems of weathertightness and increased maintenance costs are frequently deterrents to more universal acceptance of such structures*

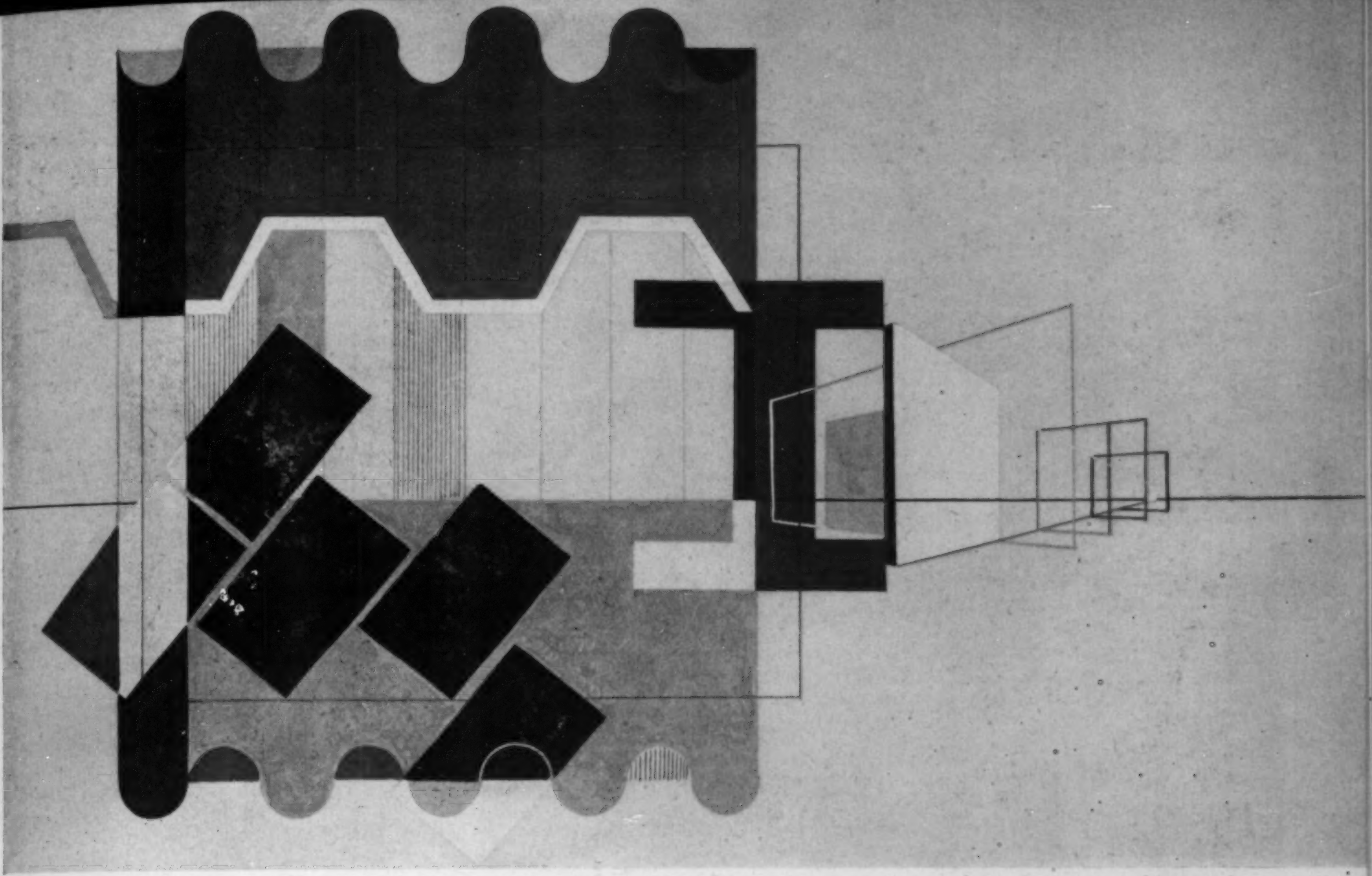


11.



12.

11. *and* **12.** *Interior views of the auditorium showing its pitched floor, stepped ceiling and indirect lighting channels*



INDUSTRIAL BUILDINGS

ARCHITECTURAL RECORD'S

BUILDING TYPES STUDY NUMBER 128

Now, almost two years after the end of the fighting war, the small industrial building has its day in the sun. The end of the war saw the country (or so it was said) glutted with factory space. There was supposed to be a depression in the offing, too, or at least a period of serious readjustment. Who would want to build a factory?

Well, many did, it soon developed. Those who wanted priorities or at least permission to build factories knew well enough why. The small industry, like the large one, had had its violent upsets; it had changed products, methods, machinery, workers and ideas. And industry cannot abide obsolescence in quarters — there is too much lost in inefficiency. So small industries beat at the doors of the OPA for permission to build, in defiance of doleful statements that building costs were too high.

Building costs were high, and still are. And many a plan has been put on the shelf. But it is also true that in many not untypical instances high building costs are not so compelling to management as high costs of production in inadequate or inefficient buildings.

And now, finally, the all-clear signal has been given from official Washington. Anybody who wants to build a plant, and can pay for it, can, without permit. The materials situation is much improved. The much-heralded recession seems to be receding. Construction should proceed in good volume.

So this Building Types Study is particularly addressed to the smaller architectural firm — small at least against the huge architect-engineer organizations which did so many great war plants. The typical architectural partnership is peculiarly well fitted to design small industrial plants. The new plants have new needs, new challenges; they will not follow standardized schemes. They will need imaginative inquisitiveness and close localized acquaintance. They will need, in short, the typical architectural organization with its ability to analyze problems and provide efficient attractive solutions.

THE ARCHITECT'S OPPORTUNITIES IN FACTORY DESIGN

By Roland A. Wank

Associate, Fellheimer and Wagner, Architects and Engineers

Two views of the Van Nelle factory, Rotterdam, Holland; Brinckmann & van der Vlugt, Architects. One of several cited by the author as examples of progressive work by the "general practitioner"

Photos Courtesy Museum of Modern Art

THE WORDS "industrial buildings" seem to make one think of a large plant. Factories which occupy space by the acre rather than by the square foot are very conspicuous, with their long, low buildings, tall stacks, tanks and enormous parking spaces; it is natural that at home as well as abroad they are accepted as typical of American industry.

Yet an astounding amount of production still takes place in structures not even remotely within this concept, and the small factory is probably more typical of American industry than the more-publicized giants. Certainly it is the small plant that concerns the architectural profession today, particularly the smaller design firms to whom this article is addressed.

Aside from the obvious timeliness of this preoccupation with the small plant, there are other fortunate circumstances that bear upon it. One, equally obvious, is the availability to the typical architectural organization of architectural commissions for small factories. Another is the scope they give to the imaginative inventiveness that seems the birthright of the architectural partnership. For the small plant offers no less freedom, certainly, than the large — probably more. And, of course, the opportunities are more likely to be right in one's own backyard.

The manufacturer who needs a new plant may be housed in structures that were adequate and conformed to safety standards and working conditions of the past, but have not been kept up with the times. Buildings well constructed in the beginning and well maintained will remain structurally sound indefinitely. As production grows in long-established mills, it may be accommodated in part by the installation of higher speed machinery, in part by additions to the building here and there to meet immediate demand, and in part by crowding — into aisles, basements, garages, temporary outbuildings that become permanent, and so forth.

The older plant is likely to be surrounded by areas of high density and high land prices; therefore its expansion is difficult. But the owners and managers are probably comfortably settled, and employees, especially the skilled older men to whom management talks on a first-name basis, are rooted in the vicinity. Removal to a new location seems undesirable. Therefore inefficiencies of the plant — cross-hauling and difficulty of inventory control between helter-skelter departments, lower production rate and higher percentage of rejections due to poor lighting or crowding, high absenteeism due to bad heating or ventilation — are often overlooked. Loyal old employees, on their part, accept obsolete sanitary facilities, make shift without cafeterias or parking spaces, and grow accustomed to the inadequate exits and other safety hazards. The plant may depend on the equivalent of some "grandfather clause" in the building regulations, or on the personal friendship of enforcement officials, to avoid major structural alterations.

But even in brand-new industrial areas one may find counterparts to the old and physically obsolescent factory. New ventures, started by aggressive and imaginative local citizens in garages, old barns and such, often become healthy industries. Their quarters, however, frequently remain a series of improvised additions, just as inadequate and inefficient.

With both types of smaller plants, the close ties of the community with the industry often prevent removal to a new location and permit continuance at rather low standards. But in this respect there is a perceptible change all along the line, and the change represents an opportunity for the architect.

Among the causes of change, an important one is mobility of labor and expansion of payroll, both of which were accelerated by the war. Men brought in from elsewhere, and even the boys of the older workers returning from the war, are as a rule more impersonal in their relations to management, and have more background for appraising the quality of working conditions. The growth of unions tends to make employees more vocal.

On the other hand, a parallel change takes place in the thinking of management when retiring older hands are replaced by the brisk young college graduates, trained in engineering, business management and efficiency methods.

Competition and increasing mechanization add their influence toward overhauling plant layouts and buildings. Few industries are secure enough to forego the latest wrinkles in new production methods. There comes the time, then, when increased power requirements, higher steam pressures, new problems of heat, fumes or mechanized handling can no longer be fitted into the limitations of the old buildings.

An observant architect should be able to make a fair guess as to the degree to which plants in his vicinity have been affected by such trends, especially in smaller communities where a good many such matters are common knowledge. Even if he were a little forehanded in establishing relations with local industries, the interest he has shown and the knowledge he has gained may pay dividends later.

Some missionary work may be needed, of course. Industries which did not use architectural services in the past may be quite genuinely surprised that the architect has so much to offer.

Most factories have some engineering staff that concerns itself with the maintenance of buildings, grounds and utilities, often also with equipment and service connection changes. From that base, the activities of the staff may spread to encompass planning and purchasing new equipment and the building alterations and additions incident thereto. From there it is but a short step to responsibility for the layout of the entire plant, "master planning" for the future, and often the design of new structures. In medium-sized and larger factories even construction of buildings may be handled by an expanded maintenance staff, the dividing line between minor alterations and major additions being hard to draw.

In other cases, such "plant engineering" departments prepare plans which are essentially graphic statements of requirements, and then make the mistake of turning directly to a building contractor for working drawings, estimates and building permits. This error is natural, because the aspect in which management is usually most keenly interested is the cost, and the contractor is accepted as the authority on that subject.

It wouldn't do, of course, to condemn such procedure as vicious in itself. Any procedure is as good as the men are who carry it out. But it would hardly be unfair to say that the chances are strongly against the owner's receiving the best possible service in that fashion. The engineering staff, whose original responsibility was maintenance of the premises and their day-by-day adaptation to process changes, is not likely to possess the temper, experience, or far-sighted vision best suited for long-range planning or for the design of buildings which will successfully justify their investment cost over a long period of years. The staff's familiarity with plan schemes, design approaches, materials and construction methods will be limited. Policies affecting building design like employee services, fire protection, natural *vs.* artificial lighting and ventilation, as practiced in other industries, will be beyond its normal scope. It is quite likely to overlook factors which lie outside the factory fence, though they are important in determining layout within, such as highway or railroad changes, shifts in the residential distribution of the labor force or in their manner of commuting.

Benet factory
Barcelona, Spain
Robert Maillart
engineer (1924)

Nor is the building contractor a generally dependable source of all the information and analytic reasoning that should be precedent to any sizable investment. His normal business does not require — and his normal profits do not permit — the maintenance of the relevant skills on his staff. Aside from that, of course, his direct employment eliminates competition, and while that may have been a less important matter under certain wartime conditions, it is hardly advisable as general policy.

If the architect isn't in the picture sketched in the preceding paragraphs, still every obsolescent plant means a potential commission. Many of them will fit within the scope of the unspecialized practitioner. In prosperous times there is little competition for the design of smaller plants from the specialized architect-engineer, whose elaborate organization does not thrive on projects of moderate size.

As to the all-important question of first contact with an industrial client, the writer has no suggestions to offer. It may be noted in passing, though, that many clients of normal practice are just the men who manage plants or sit on boards of directors. Architects design their homes, office suites or salesrooms. It becomes then a matter of convincing them that the same architect can supply equally valuable services for their plant problems.

The first question of an industrialist may well be why the employment of an architect will save more than his fee; the second, why it will produce better results. As to the first, one may assume that every architect has at his fingertips the arguments for separating the supervisory function from the activity to be supervised. As to the second, there is no ready-made answer beyond the general observations made in earlier paragraphs. It would hardly be a convincing claim that any given architect will design better buildings than any given plant engineer or contractor. It must be demonstrated that in a specific situation a particular architect will do so.

It must be assumed, of course, that the architect bent on getting such commissions has devoted a good deal of study to the matter, beginning with published material on plant design and construction. Many plants are open to the public; and for others, permission to visit may be obtained with little effort. Plant managers and engineers are often quite anxious to explain the good points of their establishments to visitors showing genuine interest, and a few calls to factories in similar lines will store up a very useful volume of information.

Some direct observation of the plant in question may also turn up pay dirt. Type of employees, manner of transportation for employees, business callers and goods, parking problems, lunch facilities are worth noting. Quality of maintenance, adequacy of lighting — natural or artificial — may often be judged from the outside. Number and type of buildings, lay of the land, space for expansion should be remembered, and as much of the flow of materials and products as the architect's training permits him to recognize. Newspapers and easily-tapped common knowledge may give him some insight into the status of unionization and of labor-management relationships.

Armed with such preliminary information, then, the architect may be in position to make at least a few intelligent comments. His life-long preoccupation with the reactions of people to their physical surroundings will probably qualify him to make valid remarks on matters of employee relations, working efficiency, effect upon the public. He might explain that a building is not truly functional unless it fulfills all possible functions — and among those are attracting the choicest types of employment seekers, holding satisfied employees, impressing the public and promoting the sale of the product.

The next step might be an invitation to study the factory from the inside. The purpose may be general recommendations for improvement, or a master plan for the guidance of development, or the placement and establishment of general characteristics of a contemplated specific building unit. A prosperous plant will almost always lack space and the manager will carry an expansion project up his sleeve. Few plants except the very large ones will have up-to-date master plans, yet most of them will disclose examples of unplanned additions that were later regretted. Thus a wide-awake architect is likely to find some solid meat in his survey.

On the whole, though, understanding of the process of manufacture will be essential for intelligent comment.

Some processes are simple enough so that a few hours may convey a general idea of sequence and requirements; others — especially in chemicals — may be really understood only by experts. In most industries, though, a few days' observation coupled with explanations given by the plant personnel will suffice for a nodding acquaintance. By and large, the architect will recognize where materials come from, in what shape, quantity and by what means; what is done to them, and how they are stored and shipped. By way of caution, bright ideas should be checked with the plant personnel. The brighter they appear, the more likely it is that others thought of them before and that they were rejected for considered reasons — though the same considerations may not apply under changed circumstances — and the disregard of the obvious is a widespread habit.

By then the architect must show his mettle in bringing back to the client a reasoned, documented statement of the sort that is useful to determine a course of action. And it is a fair bet that the next talk may be devoted to the terms of the commission.

The architect with a smaller, unspecialized practice faces such planning and, later, design problems with equipment quite different from that of the big architect-engineer firms. He will be somewhat handicapped by not having all required engineering skills in his own office. On the other hand, he may exploit some of the potential virtues of smaller scale and of the perspective given by the variety of non-specialized practice. If his overheads are substantially lower, he may have a natural advantage in dealing with smaller plants which require more study and detail in proportion to the investment, while the large office depends on vast projects with extensive repetition of uniform elements.

The handicap to which reference was made must be overcome by extra effort. In the nature of industrial work, utilities assume great significance. Steam and electric lines will have larger capacities and will operate under greater pressures or voltages. Water supply may be of several different kinds, requiring multiple systems and special methods of treatment. To normal storm and sanitary drainage, one or more process sewer systems may be added. There may occur other distribution systems for gases, fuels, compressed air, etc. Handling of goods may be a substantial part of production cost, and wise choice between mechanical systems may be important. Problems of ventilation and temperature control may be quite complex and oversize as to capacity. Column spacing, clear height, structural systems and design loads influence not only construction costs and efficiency of the immediate operation, but also future flexibility. Fire and explosion hazards, sabotage and theft may assume proportions quite different from those encountered in other fields of practice.

In addition, of course, process layout is fundamental to building design. Processes are rarely unalterable, and never stay put for any length of time. Space requirements, sequence, and number of employees may be changed overnight by new inventions. Even with given components there may be choices between one- or multi-story buildings, consolidation or division between structures, accommodation of certain steps indoors or outdoors, and so forth.

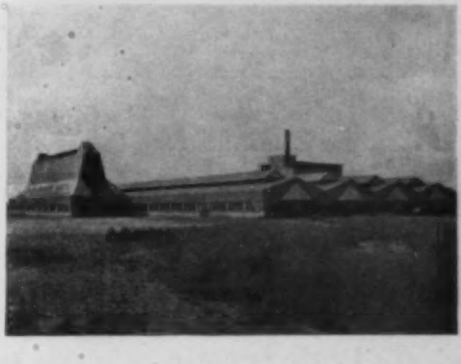
The proportionate importance of correct solutions — as compared to matters more commonly considered to fall within the architect's scope — is greater and more critical.

TVA Consumer's Cooperative
Roland A. Wank
principal architect

On the other hand, it may be said more or less flatly that there is nothing so esoteric in the listed problems but that it will yield to common sense analysis. And after the first few — and rather strenuous — projects the architect will find that these things fall into a sort of natural pattern which makes it easier to deal with them.

Aid may be enlisted from at least three sources. First comes, of course, the plant personnel, who will have definite opinions, subject to check by the architect's skill and — sometimes — pure intuition.

Secondly, engineering consultants can be readily found for structural and utility problems. Independent process engineers are less easy to locate, especially for smaller projects; and plant managements may be skittish about exposing their special know-how to expert observers.



Hat factory in Luckenwalde
Germany (1921–23)
Eric Mendelsohn
architect

The third source of help is the equipment manufacturer, and he will often take the place of the process expert. New production machinery is almost always involved in industrial building projects. Sometimes the machines, furnished on long delivery dates, have been on order long before the architect entered the project. The manufacturer's staff is ready to give advice — subject, as may be noted again, to the architect's own critical examination. Besides the production equipment firms, the manufacturers of ventilating, hoisting, conveying and other general-purpose equipment have expert staffs, often with members specially familiar with the problems of particular industries.

The question is quite likely to be raised by somebody: given all the specialized knowledge available at the various sources, why is the architect peculiarly fitted to coordinate it into the form of a project? True, he also supplies specific services, but inasmuch as they relate primarily to enclosure of process and to auxiliary buildings, they deal, in the first instance, with financially less important components of the project.

But the answer can hardly be generalized, because, as said before, its validity depends upon the relative skill — perhaps one should say genius — of particular persons in particular situations. Any person, regardless of occupation, may be a natural-born planner and coordinator.

The following two propositions may, perhaps, be argued on strictly logical grounds.

First, that the architect is more likely to be endowed with such natural gifts, because it was that bent which predisposed him to choose architecture to begin with.

Second, that his training and experience tend to develop the inclination to size up problems in their entirety, to be aware of future consequences of present decisions, and predict human reactions — which are becoming more important to the success of industrial operations every year.

Specific instances of superior judgment exhibited by the architect are odious, and the writer hesitates to cite any. The practitioner new to this field will have to develop his own precedent as he goes along. Suffice it to say that he has ample opportunity.

Turbine factory
Berlin, Germany
Peter Behrens
architect (1909)

There remains, perhaps, something to be said about the desirability of more smaller-scale organizations all over the country working their way into the industrial field.

From the architect's own point of view, the matter is obvious. Plant construction is a major sector of the building industry, in which the architect could have a greater share than at present. It comes in units large enough to be very desirable to the normal architectural office, if not always for the super-firm.

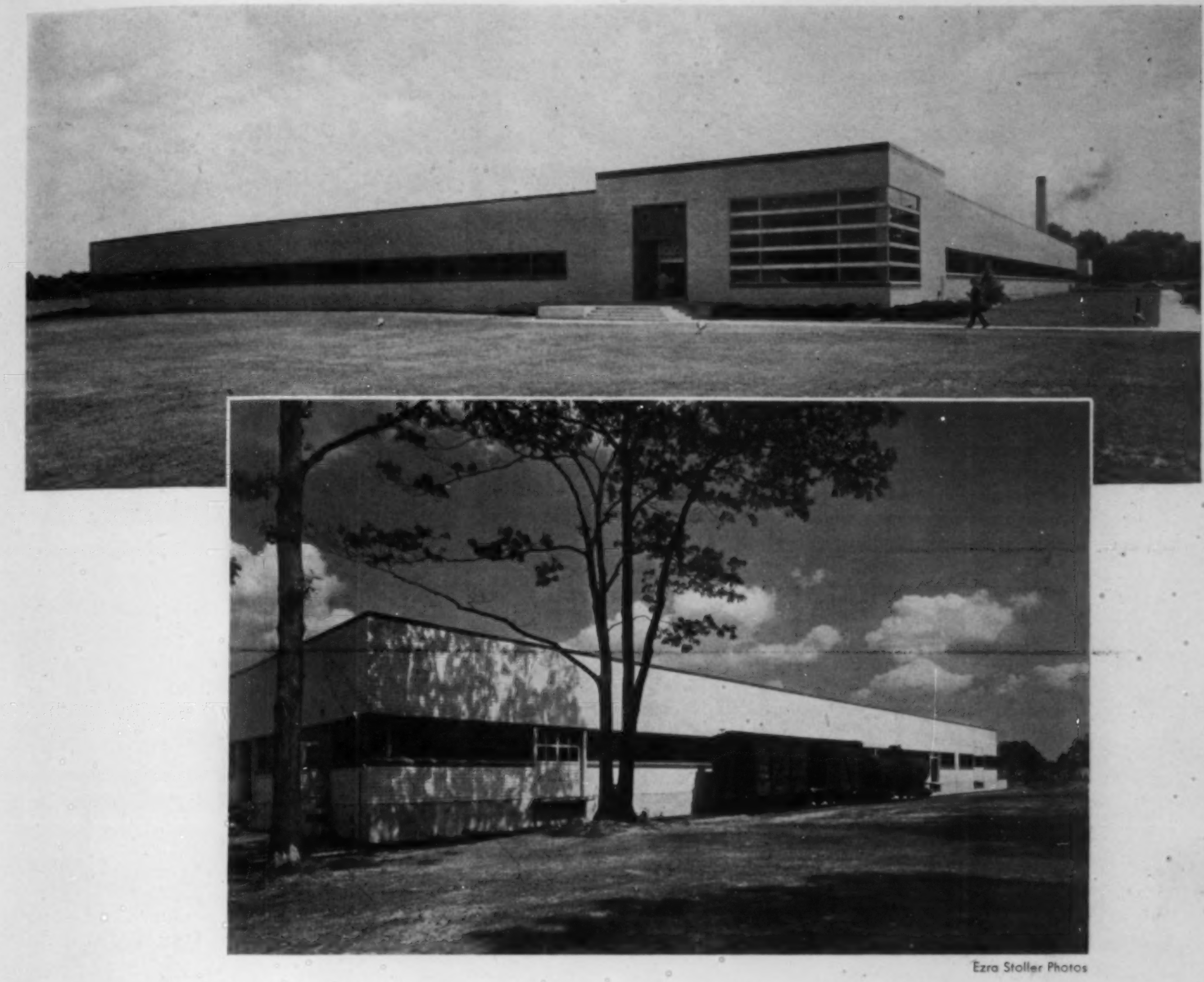
But there is also a public interest involved — the stake we all have in a brighter, cleaner, and if the word is permissible at all, a more *beautiful* country; in greater amenities, less waste, more joy in our daily surroundings — for those who work inside and for those to whom factories are a part of the landscape. The architect, far more than the plant engineer, the contractor or the process expert is competent to procure those plus values that taken together spell civilization.

And the smaller architect is perhaps peculiarly fitted to make a contribution, at least with respect to the average-sized plant.

During the last few decades there has grown up a sort of standardized concept of factory construction, derived mainly from the oversized mass-production plant. It is celebrated all over the world — yet its very standardization may lead a skeptic to wonder why the best answer to varied requirements should come out so nearly uniform.

Actually, a good deal of the impressiveness of these super-plant buildings owes to endless repetition. Even an indifferent unit tends to acquire majesty when repeated often enough. Their weak points are usually the places where the repetition is deliberately broken for emphasis, as at entrances. And the auxiliary buildings associated with some of the giant production plants, as office buildings, powerhouses, and so forth, lack comparable scale and are therefore quite disappointing.

While it is true that many production activities are well, and flexibly, housed in uniform great halls of substantially similar appearance from Seattle to Charleston, still most industries have sufficient individuality in their processes, site or climatic conditions to justify design solutions that are not nearly so generalized and typical. The small architect, approaching industrial design of necessity with few preestablished notions, is quite likely to come out with designs adapted to particular sets of requirements, and diversified enough to be of value in keeping industrial design from freezing into a universal mold. Much of the progress in industrial design has been spurred on by the works of general practitioners, as the excellent Finnish plants of Aalto, the Van Nelle factory of Brinkman and van der Vlugt, the mills of the Swedish cooperatives, the powerhouses of TVA, the chemical works of Alden Dow. Clients will be better served, and our civilization stands to be enriched if the sources of unorthodox creative contribution can be kept bubbling.



Ezra Stoller Photos

NEWEST OF JOHNSON & JOHNSON FACTORIES

Baby Products Plant, Cranford, N. J.; The Ballinger Company, Architects and Engineers; John A. Johnson and Sons, Brooklyn, General Contractors

In architectural literature the Johnson & Johnson plants are already well known. In industrial circles these factories are usually spoken of as "showplaces," but it is doubtful if this advertising word conveys much of their architectural significance.

It is certainly true that all of the Johnson & Johnson plants are deliberately designed to be "showplaces," for the company's sales policies embrace organized visits to the plants by various groups of doctors, nurses, editors and so on. But for all of the dolling up that this policy naturally involves, the Johnson concept of a factory has other facets.

One is consideration for employees, as this new plant proclaims with its own voice. Along functional lines, there is also an intensive study of operational methods, leading to the latest in automatic processes and equipment and conveyors.

A recent publicity release states that this new factory "is expected to exemplify again the belief of General R. W. Johnson that a factory can represent the latest in functional efficiency and still retain its modern architectural beauty." If this particular release gets slightly mixed, at least there is evidence that the Johnson concept extends to a full appreciation of architectural values.

As for the showplace part, it dictated in large measure the plan of the plant. The "manufacturing area" on the plan is proportionately small. Actually this terminology

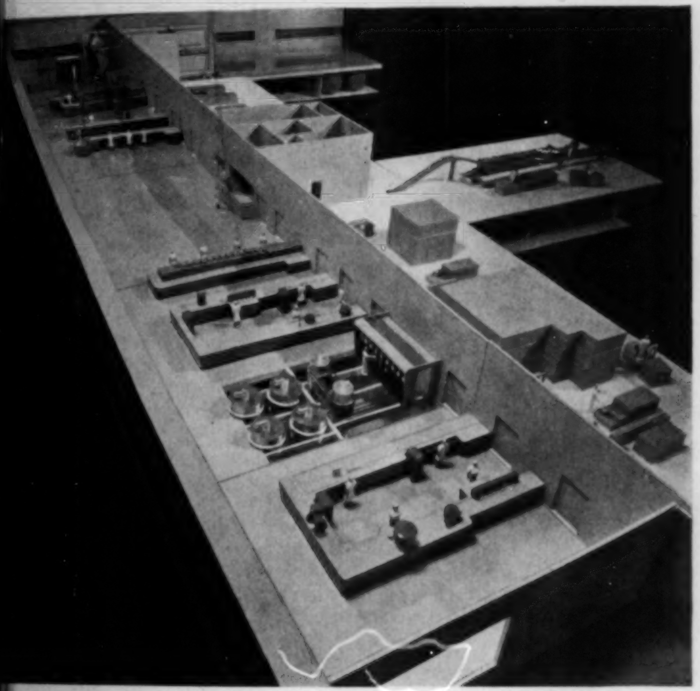
is literally correct, but there are any number of "warehousing" or pre-manufacturing processes not done here. In any case, the manufacturing area with its mixing and packaging lines is a "showplace," where the more interesting operations are made especially intriguing.

This exhibition technique explains the handsome modern lobby with its huge window looking into the manufacturing section. Here is an artful invitation to any visitor — even, or maybe especially, a prospective employee — to pause for edification.

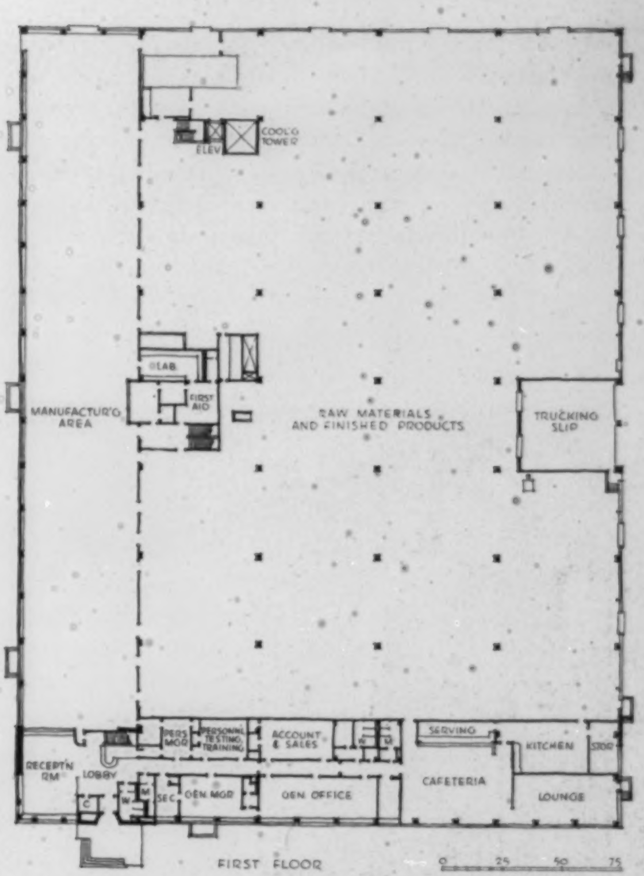
As for employee relations, the lobby belongs as much to the workers as to the visitors. For the front entrance is the employees' entrance. This, too, is deliberate; the worker comes in the "front door" along with the works manager or any of his special guests. And perhaps if the worker is thus included in the family, it is not only privilege but also responsibility that he shares.

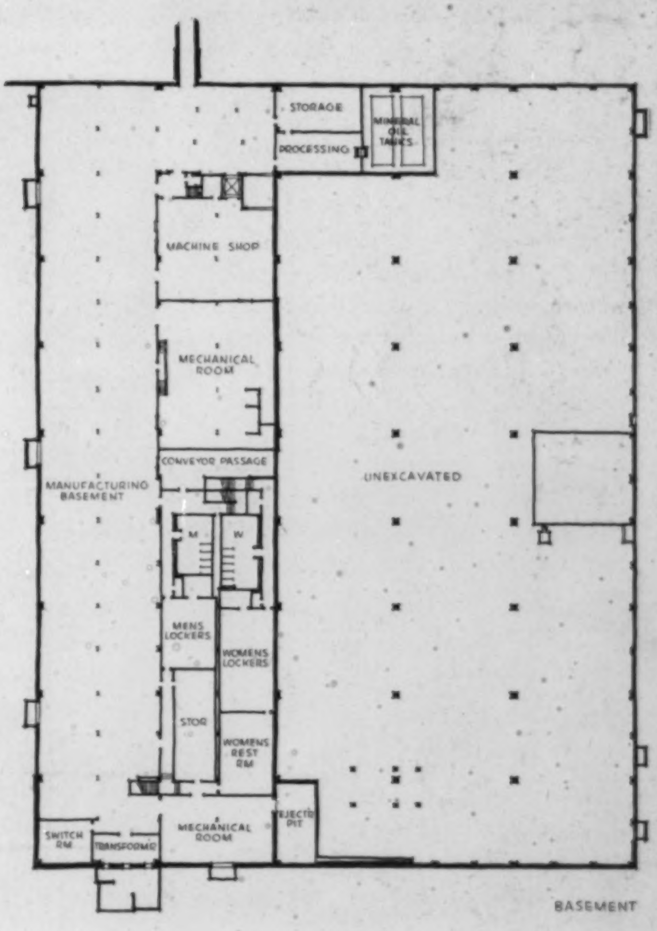
From the lobby the employees go down the stairs to lockers and washrooms, come up via other stairs to their stations. Men and women workers follow entirely separate paths through the basement locker area, this being not so much a stipulation of management as a legal requirement in the New Jersey area.

Thoughtfulness toward employees put the cafeteria at the end of the office section on the ground floor. At one side of the cafeteria is an employees' lounge, with all the glamor of modern furniture and decor, and with club facilities, which extend even to a broadcasting booth where programs may be assisted with sound equipment, and from where music is piped through the plant during working hours. One reason for so placing the club and cafeteria facilities is so that this



Detailed model of manufacturing area aided in locating assembly lines not only for efficient production but also for exhibition

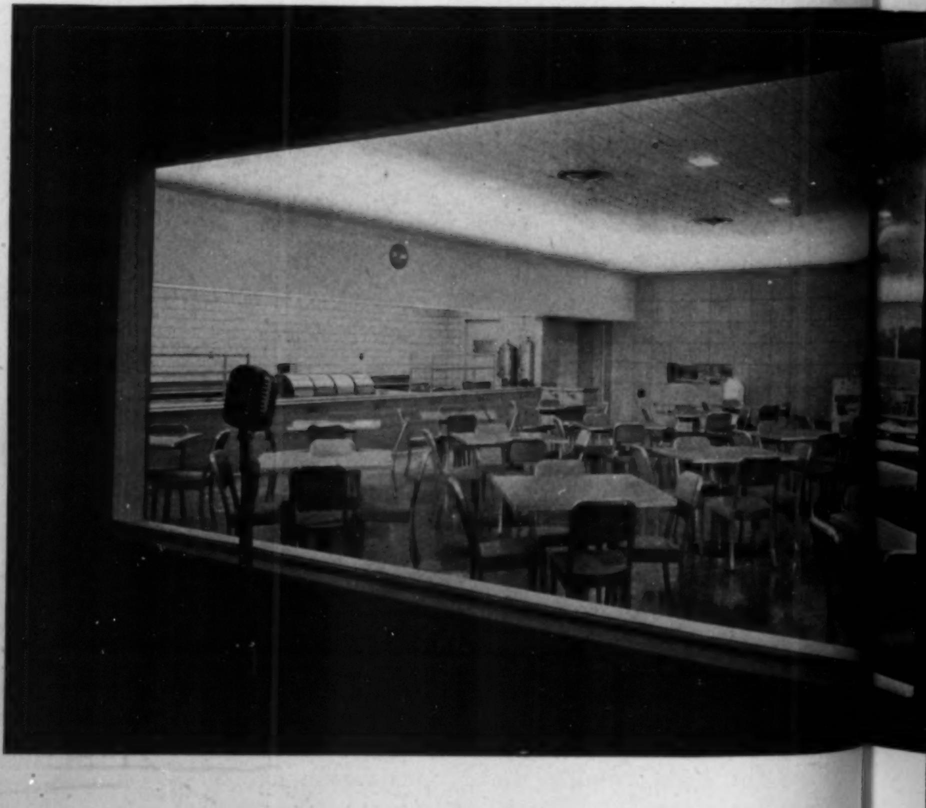

COOL'G TOWER
ELEV
LAB
FIRST AID
MANUFACTUR'G AREA
RAW MATERIALS AND FINISHED PRODUCTS
TRUCKING SLIP
PERS MGR
PERSONNL TESTING TRAINING
ACCOUNT & SALES
W
M
SERVING
KITCHEN
STOR
RECEPT'N RM
LOBBY
C
W
M
SEC
GEN MGR
GEN OFFICE
CAFETERIA
LOUNGE
FIRST FLOOR
0
25
50
75


STORAGE
MINERAL OIL TANKS
PROCESSING
MACHINE SHOP
MECHANICAL ROOM
CONVEYOR PASSAGE
MANUFACTURING BASEMENT
UNEXCAVATED
M
W
MENS LOCKERS
WOMENS LOCKERS
STOR
WOMENS REST RM
SWITCH RM
TRANSFORM'R
MECHANICAL ROOM
EJECT'R PIT
BASEMENT

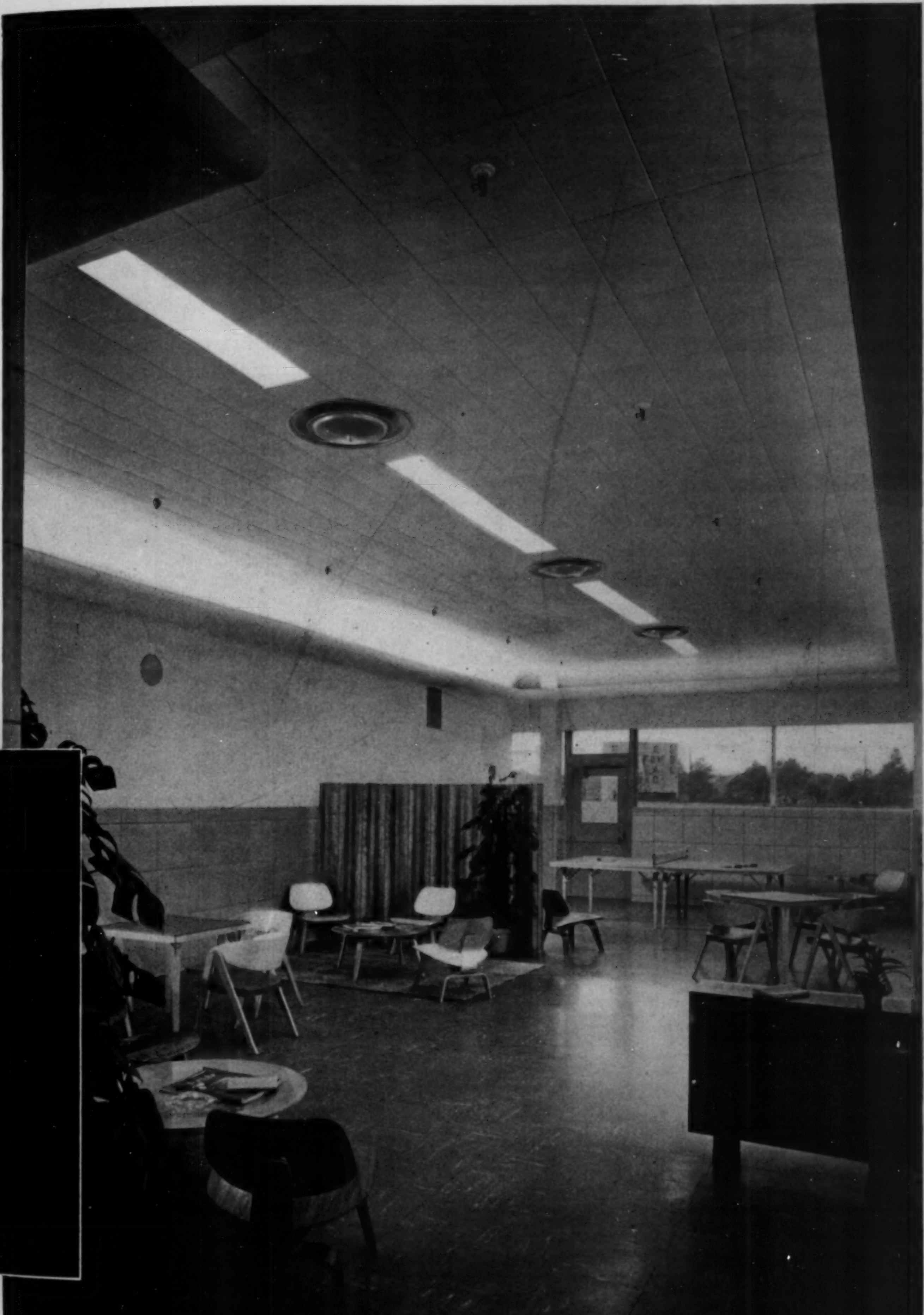
area may be separately opened for parties or meetings after hours.

In planning the manufacturing section, the company has availed itself of recommendation of experts in functional design, acoustics, lighting and psychology of color. Floors, walls and equipment are in colors known to minimize fatigue, eye-strain, and are conducive to efficient production. Herbert Rosengren, industrial designer, was consultant on color schemes.

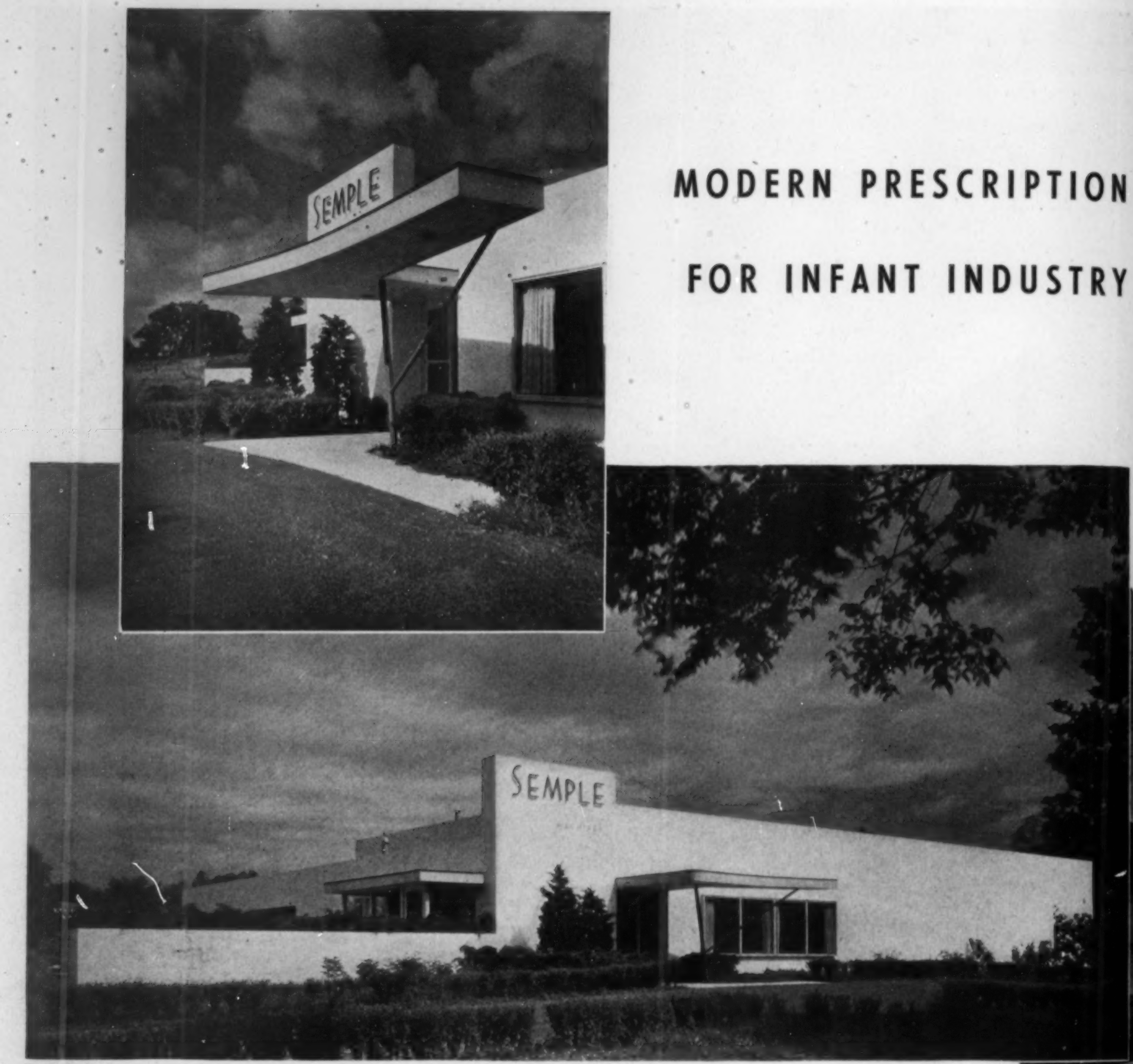
Site for the plant is a 30-acre tract at Cranford, N. J., and has been graded and landscaped. The building is but 250 by 315 ft., and is so placed that expansion can be made in any direction. With this in mind, the power station is in a separate building 180 ft. from the main building, so that this well-known block to expansion has been eliminated.



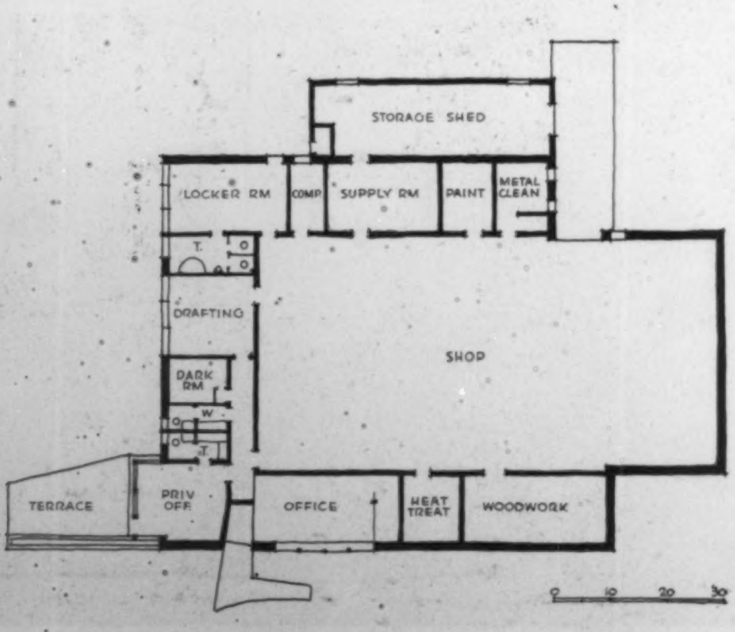
Above: spacious private office of the plant manager. Right: plant cafeteria, as seen from the broadcasting booth, whence restful music is piped to production areas; or speeches and music are "aired" for employee entertainment programs. Opposite page: the employees' lounge, which adjoins the cafeteria. The cafeteria and lounge facilities are so located as to be opened separately during evening hours for meetings or parties of workers. The same facilities may also be used for entertainment of groups invited to visit the plant



MODERN PRESCRIPTION FOR INFANT INDUSTRY


SEMPLE
SEMPLE

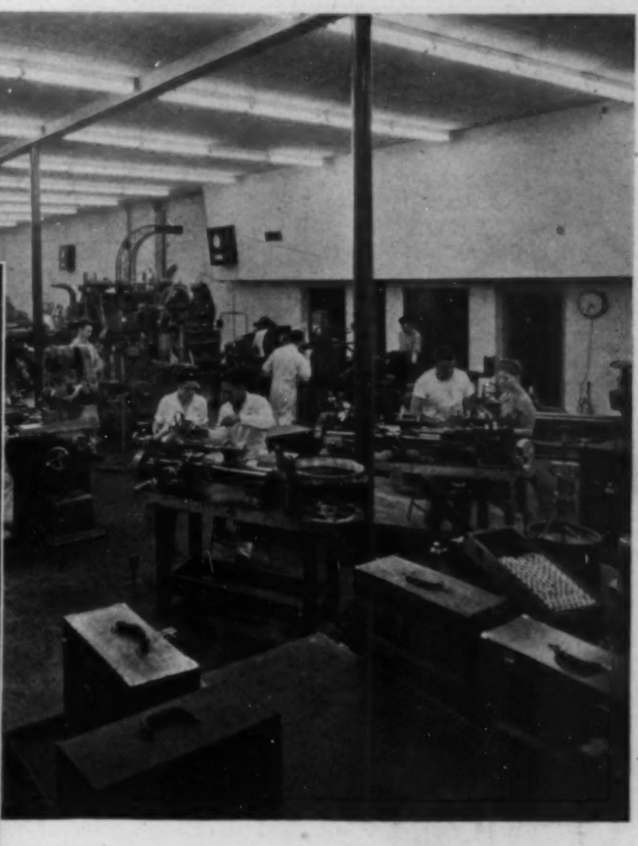
Piaget Photos.

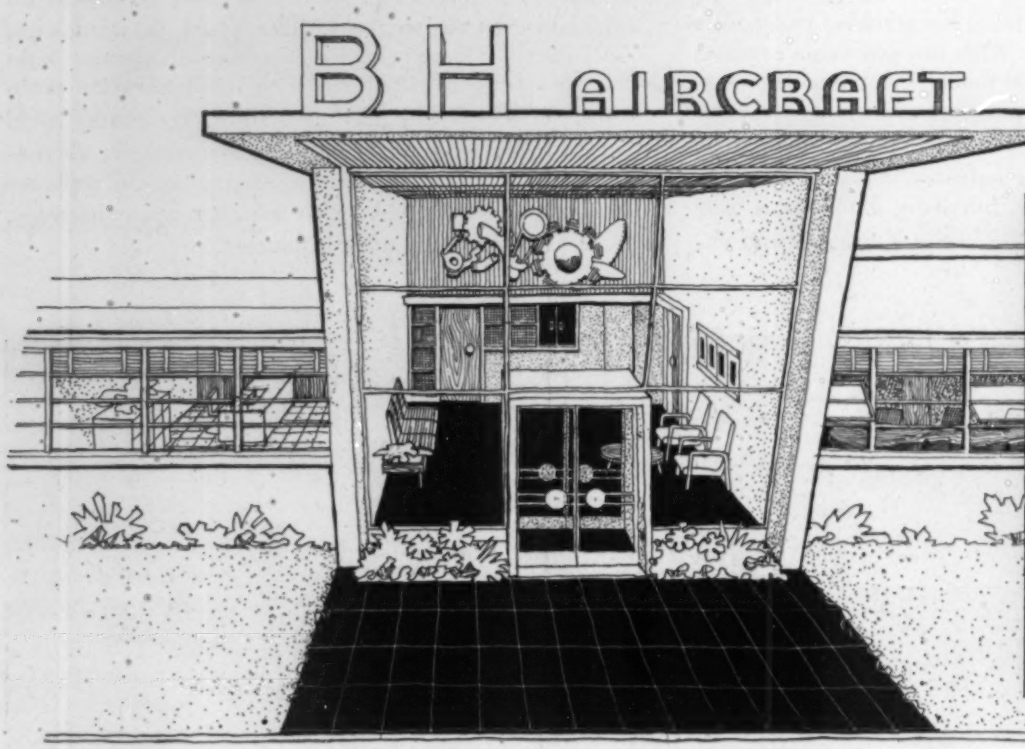

STORAGE SHED
LOCKER RM
COMP
SUPPLY RM
PAINT
METAL CLEAN
T.
DRAFTING
DARK RM
W
T.
SHOP
TERRACE
PRIV OFF
OFFICE
HEAT TREAT
WOODWORK
0
10
20
30

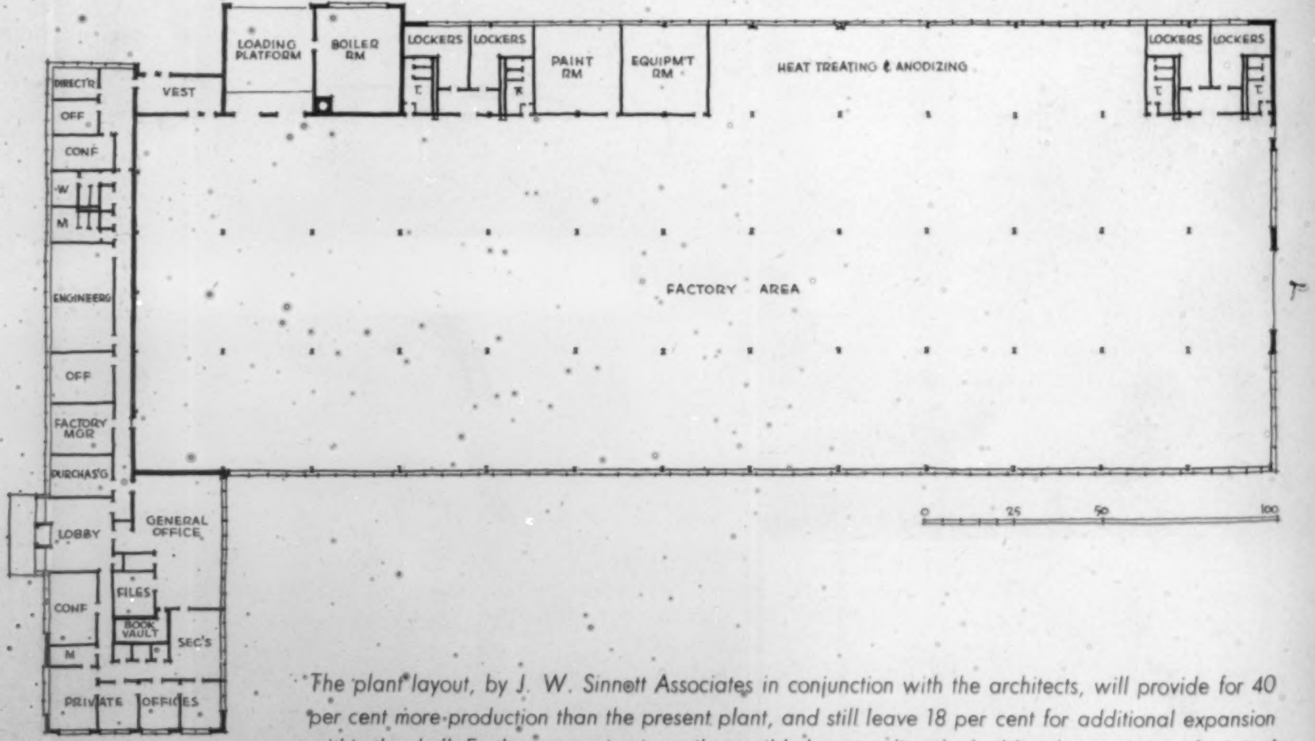
THIS was just such an opportunity for the imaginative architect as Mr. Wank addresses himself to (page 86), the small industry bursting out of a backyard garage. Frederick Semple began riding his machine tool hobby in his mother's basement. With the war came requests for him to undertake special tool and instrument orders. Then came helpers, more machine tools in the garage, an enlargement of the basement, and finally the realization that here was a going industry, needing a factory building. This plant was hurriedly built as a war project, and has enabled the business to grow and entrench. Such an industry, moreover, gives an architect plenty of scope: there is no cut-and-dried formula. This plan is simple, and largely self-explanatory, except for the non-existent windows. The plant is windowless because Mr. Semple chose constant fluorescent light instead of varying sunlight, with its distribution problems. It was found also that the heat which would come in windows would cost more to remove by air conditioning than the cost of electric light. Outside walls are of double cinder block, with 3-in. air space between, filled with expanded mica insulation.

Semple Machine Shop, near St. Louis

Harris Armstrong, Architect




BH AIRCRAFT

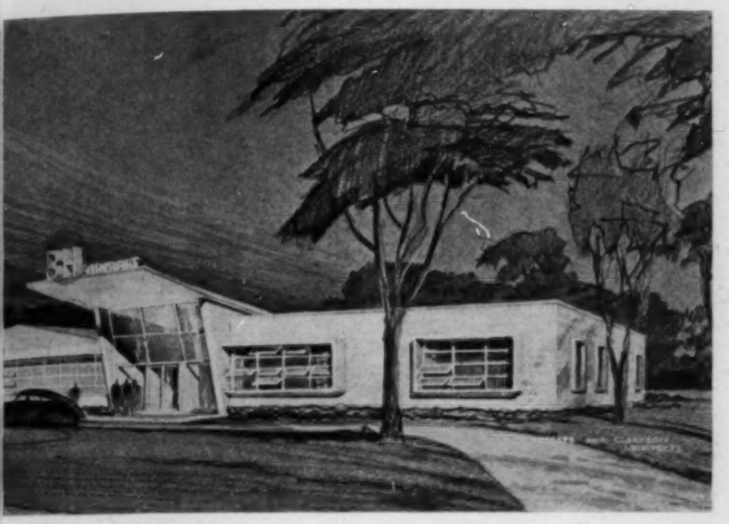

LOADING PLATFORM
BOILER RM
LOCKERS
LOCKERS
PAINT RM
EQUIPM'T RM
HEAT TREATING & ANODIZING
LOCKERS
LOCKERS
DIRECT'R
VEST
OFF
CONF
W
M
ENGINEER'G
FACTORY AREA
OFF
FACTORY MGR
PURCHAS'G
LOBBY
GENERAL OFFICE
FILES
CONF
BOOK VAULT
SEC'S
M
PRIVATE OFFICES
0
25
50
100

The plant layout, by J. W. Sinnott Associates in conjunction with the architects, will provide for 40 per cent more production than the present plant, and still leave 18 per cent for additional expansion within the shell. Further expansion is easily possible by extending the building by repetition of original bay design. Parking will increase parallel with the building, and in direct proportion to increase in labor force. The column spacing of 25 by 33 ft. was chosen for this particular operation, which must accommodate small private planes within the plant. The plan also provides good circulation

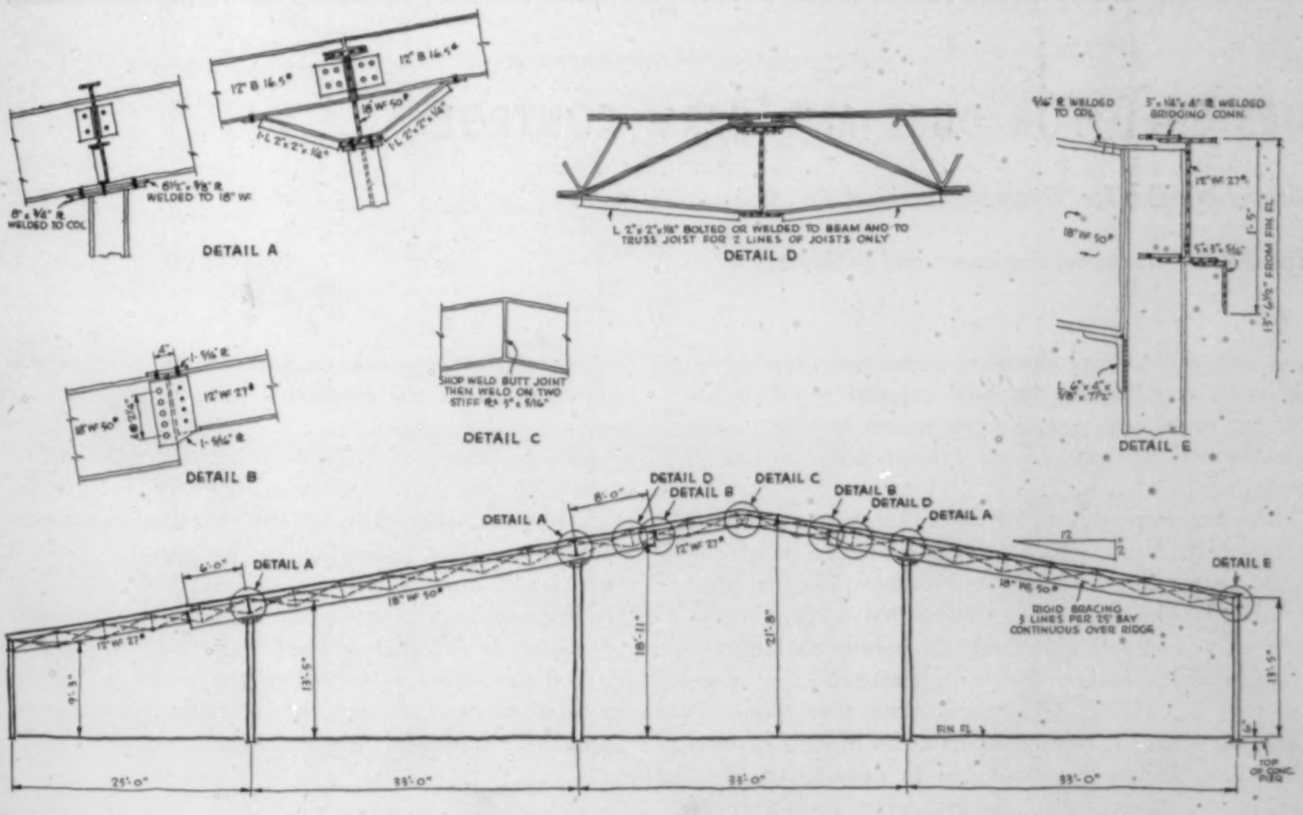
ECONOMICAL DESIGN RETAINS AMENITY VALUES

B H Aircraft Plant, Islip, L. I.; Petroff and Clarkson, Architects;

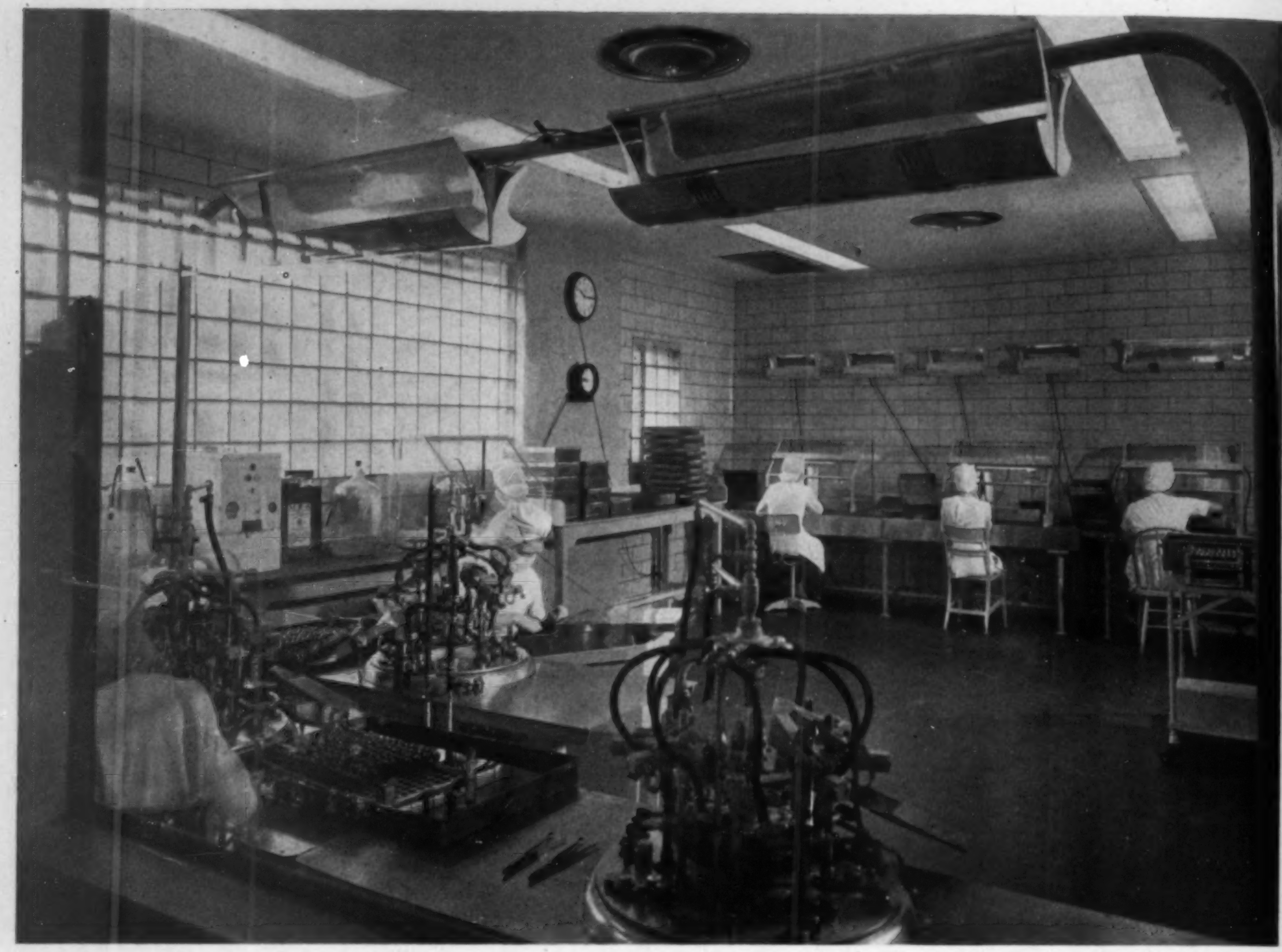
Robert H. Edwards, Associate Architect



After years of operation making aircraft sub-assemblies, this industry needed a new plant, for typical reasons: inefficient column spacing and equipment layout, congestion in loading, shipping, parking, multi-floor operation, and general inefficiency. Management also wanted better labor amenities, and improved appearance. Thus high building costs were less of a factor than high production costs. Nevertheless the design of the new plant is economical in several respects. The building contains 47,600 sq. ft., and estimated cost, exclusive of equipment and design fees, is $286,552, or $6.00 a sq. ft. The design calls for concrete block construction, waterproof paint treated inside and out, steel windows, steel column, joist and roof deck construction, on concrete footings, foundations and slab on earth. Corrugated glass panels built into the roof construction will provide maximum daylight and a uniform lighting curve through the plant cross section.


12" B 16.5#
12" B 16.5#
18" WF 50#
1-L 2" x 2" x 1/4"
1-L 2" x 2" x 1/4"
6 1/2" x 3/8" R.
WELDED TO 18" WF
8" x 1/4" R.
WELDED TO COL
DETAIL A
L 2" x 2" x 1/8" BOLTED OR WELDED TO BEAM AND TO TRUSS JOIST FOR 2 LINES OF JOISTS ONLY
DETAIL D
5/16" R WELDED TO COL
3" x 1/4" x 4" R WELDED BRIDGING CONN.
12" WF 27#
18" WF 50#
1'-5"
5" x 3" x 5/16"
13'-6 1/2" FROM FIN FL
L 6" x 4" x 3/8" x 7 1/2"
DETAIL E
4"
1-5/16" R
12" WF 27#
18" WF 50#
4 @ 2 1/4"
1-5/16" R
DETAIL B
SHOP WELD BUTT JOINT THEN WELD ON TWO STIFF R's 3" x 5/16"
DETAIL C
DETAIL D
DETAIL B
DETAIL C
DETAIL B
DETAIL D
DETAIL A
DETAIL A
DETAIL A
DETAIL E
8'-0"
6'-0"
12" WF 27#
18" WF 50#
12" WF 27#
18" WF 50#
12
2
RIGID BRACING 3 LINES PER 25' BAY CONTINUOUS OVER RIDGE
9'-3"
13'-5"
18'-11"
21'-8"
13'-5"
FIN FL
TOP OF CONC. PIER
25'-0"
33'-0"
33'-0"
33'-0"

The structural steel design is unusually economical, requiring only 6.00 lb. of steel per sq. ft. The central span girders are cantilevered over the interior columns. Beyond the cantilever, both at the side and in the center, the steel is lightened



DESIGNED FOR DUST AND GERM CONTROL

Ampul Building for Winthrop Chemical Co., Rensselaer, N. Y.

The Austin Company, Engineers and Builders

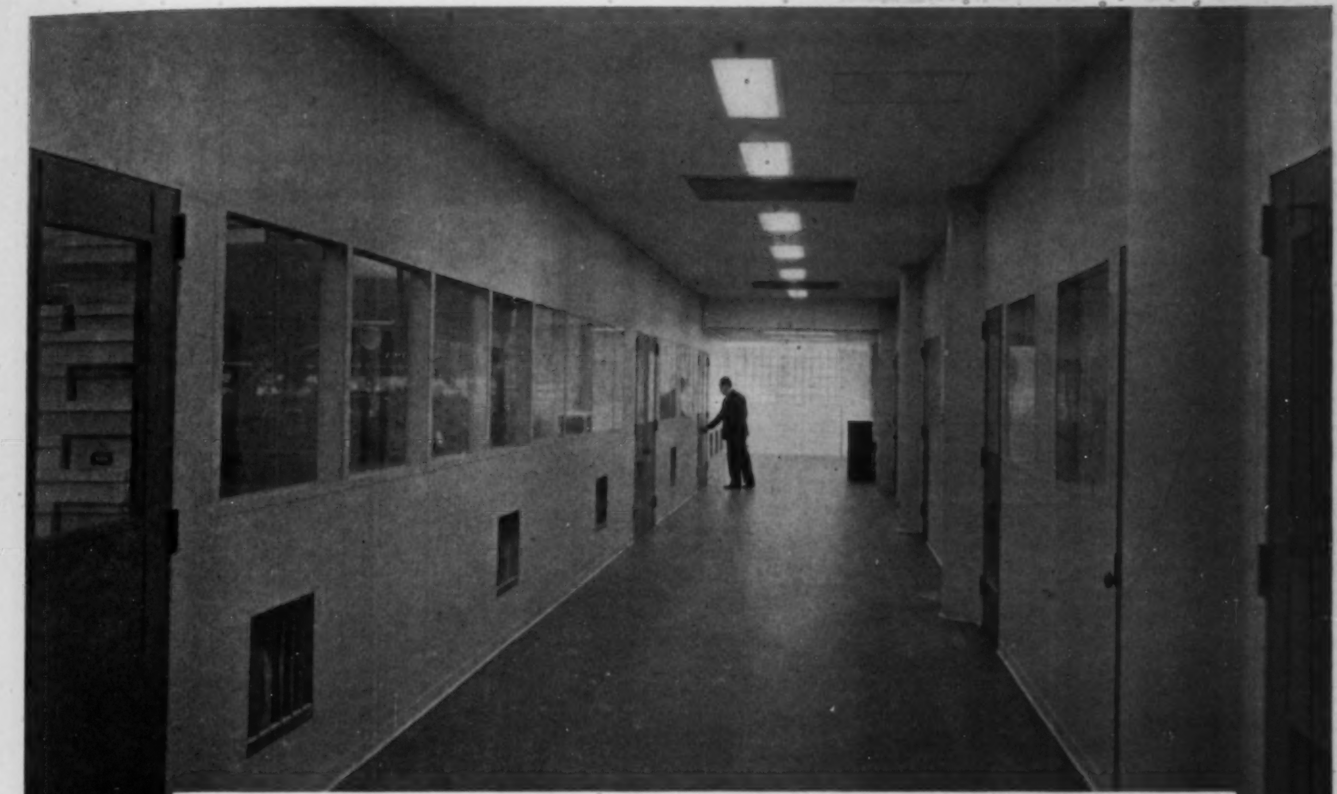
DESIGNED for the production of pharmaceutical products, this building imposed extreme requirements for control of dust, germs, temperature, humidity, also for protection of employees against poisons used in certain departments.

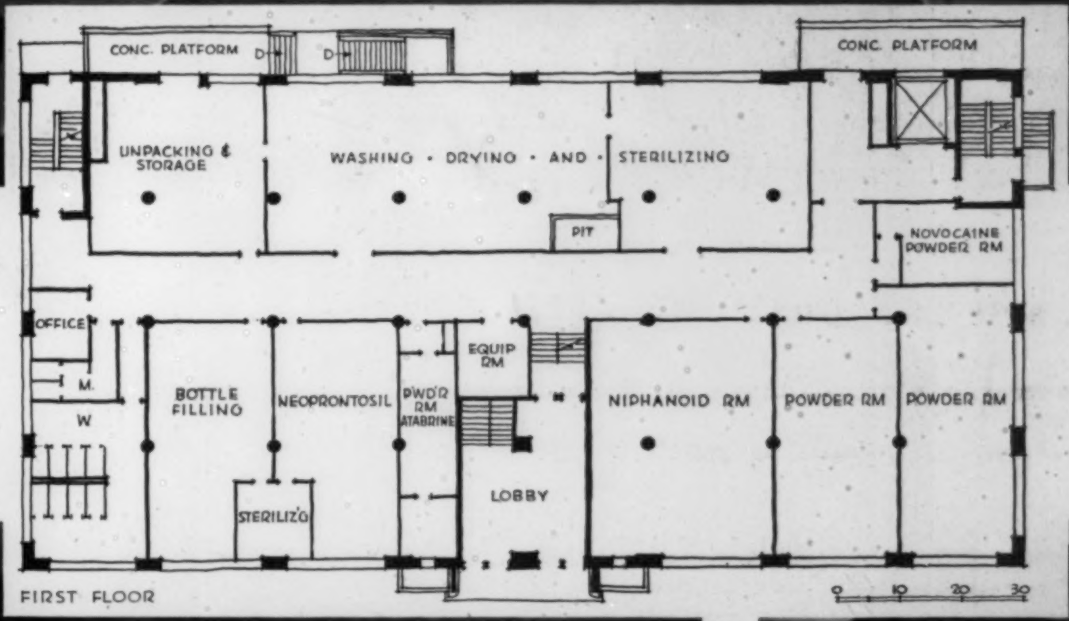
The first requirement for the building was to seal it completely. Next was virtually to eliminate dust. The building, a reinforced concrete structure, has specially-insulated brick sidewalls, constructed with a vapor barrier, and smooth glazed tile throughout the interior, where corners, ledges, and other dust-collecting spots have been virtually eliminated. With glass block in place of windows, and generous areas of sash in steel partitions, it has been possible to provide excellent distribution of daylight and still prevent infiltration of dust or moisture.

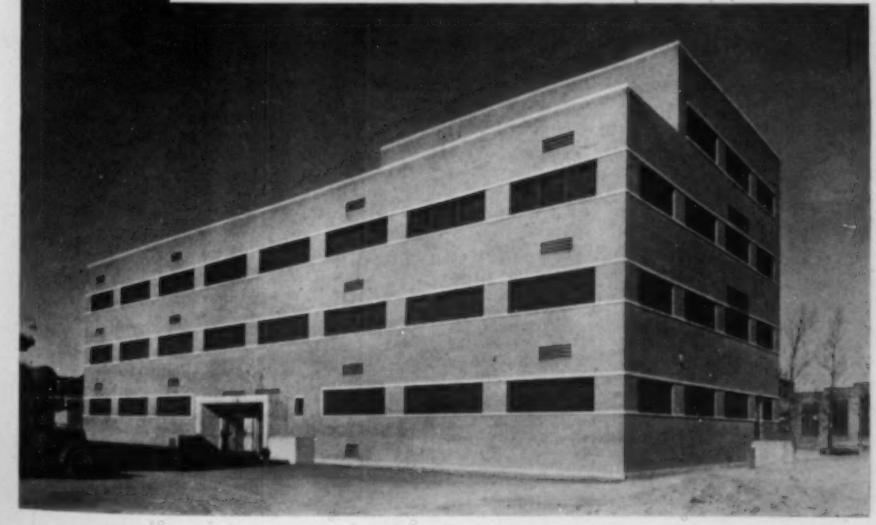
Suspended ceilings on the first, second and third floors are completely flush, and are treated with a special kind of non-flaking plaster. Fluorescent lighting is recessed in glass-enclosed fixtures, and all piping is concealed above the suspended ceiling. All floors are covered with linoleum.

All employees enter the building through the first floor lobby, and go directly to the basement to the locker rooms, where they change to uniforms and pass through a dedusting machine, which removes all loose particles of dust, lint and hair, and then proceed to the various departments on all three floors. This same procedure is followed whenever the employees leave their departments to go out of the building. Visitors likewise will enter through the main lobby to a visitors' room in the basement, where they will be supplied with

Above: sterile lamps in a drug-making department. Opposite page, top: in corridors everything is flush, to obviate dust collection. Right: exterior walls, with vapor barrier and glass block, are virtually sealed. Far right: the "de-dusting" passage



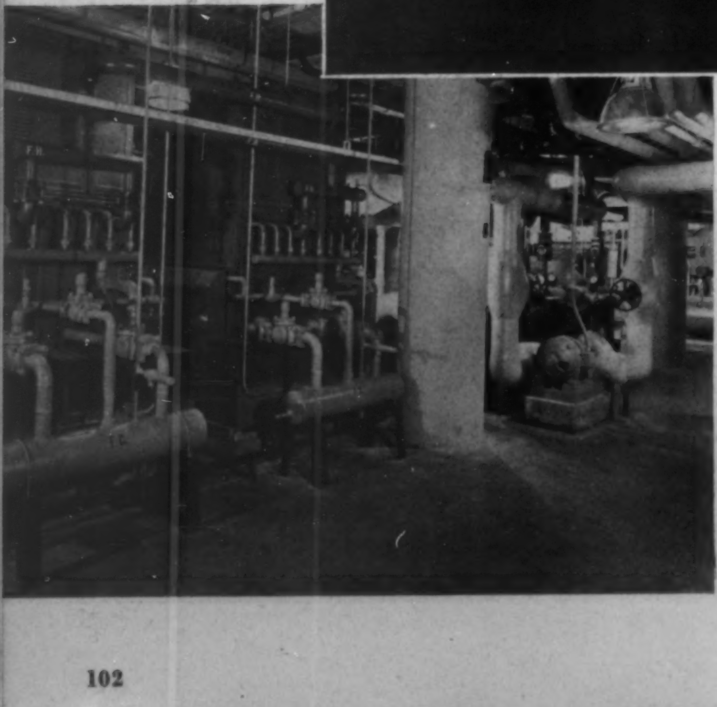

CONC. PLATFORM
D
D
CONC. PLATFORM
UNPACKING & STORAGE
WASHING · DRYING · AND · STERILIZING
PIT
NOVOCAINE POWDER RM
OFFICE
M.
W
BOTTLE FILLING
NEOPRONTOSIL
PWD'R RM ATABRINE
EQUIP RM
NIPHANOID RM
POWDER RM
POWDER RM
STERILIZ'G
LOBBY
FIRST FLOOR
0
10
20
30

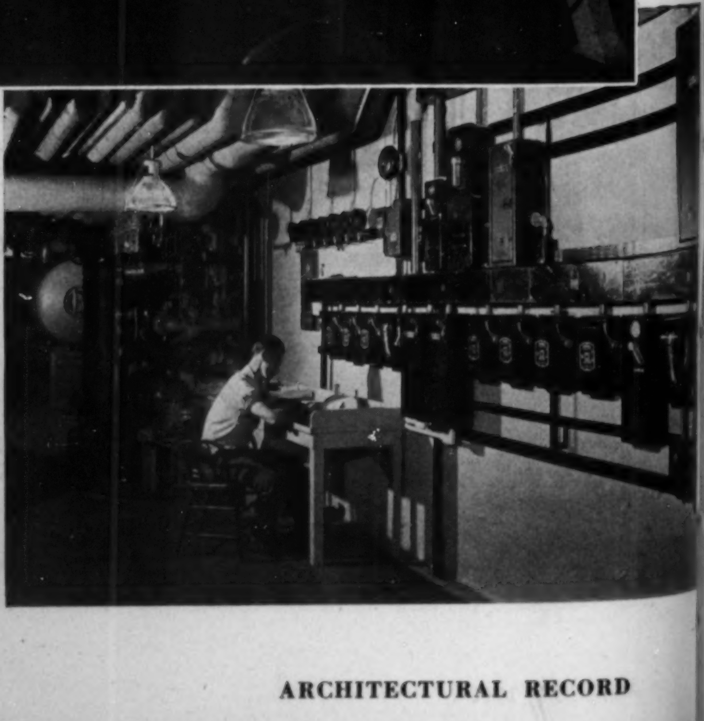


special clothing, and then will pass through the dedusters, like the employees, before inspecting the various departments.

Each department is zoned separately for air conditioning, each with its own controls. Humidity control is an especial requirement in certain departments. Sterile lamps are installed at two places in the main supply ducts on each floor. All outside air is first filtered through throw-away filters, and then, before being distributed, is again filtered electrostatically. Supply ducts are concealed in suspended ceilings; the corridors themselves are used for returns. A complete system of central vacuum cleaning equipment has been provided, with outlets available to all parts of the building.

Below: immaculate conditions must be maintained where ampuls, vials and bottles are washed. Bottom, left: air washers and refrigerating compressors. Bottom, right: control center for compressors, dust-collecting and vacuum





ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

INDUSTRIAL PLANTS—A HARVARD RESEARCH PROJECT

By Walter F. Bogner, Professor of Architecture, Harvard University

INDUSTRIAL buildings are governed in their form and construction primarily by efficiency. A compact and convenient plant layout reduces the manufacturer's production costs; economy in building expense cuts down his overhead. Industrial buildings are likely to run into large areas, and the fluctuations in price per square foot can be great due to the large variety in building methods and types of mechanical installations at the disposal of the designer. In the interest of efficiency the need for an analysis into the kinds of materials, the systems of framing, and the types of installations to be used in the construction is therefore indicated.

An industrial plant analysis was undertaken by a group of my students at the Harvard School of Design, from which the illustrations accompanying this text resulted.

The charts and drawings are by no means complete, nor, I am afraid, are they accurate in every detail. They deal only with the factors which influence the building above ground. Foundations are not included, nor have the installations for power, light, heat, ventilation, fire protection, and other miscellaneous piping been adequately taken into account. They are student studies, prepared in a short time by men who have not yet had practical experience and who had only their instructors, the library, and a few materials dealers for guidance and help. The analysis must therefore be taken as an indication of a method of approach and not as a compendium of charts and tables of concise facts and figures. The irksome inaccuracies which may come to light in this publication only emphasize the great need for documented information permitting a comparison of materials and methods of construction on a uniform and unbiased basis.

Three factors were taken into consideration as determinants for the efficiency of construction methods and materials: first, the economic factors, comprising initial cost, upkeep, and operating cost as influenced by heat losses; second, the installation of the materials in the interest of demountability, which affects the cost of plant expansion; third, the functional properties of the various types of construction. The last-named covered the factors which cannot be evaluated on a dollars-and-cents basis, like acoustic properties, appearance, and the resistance of the material to weather and hard usage.

The cost figures have been based on data for the Boston area compiled and published by R. S. Means in a booklet entitled, "Building Construction Cost Data, 1945." Wherever his figures were incomplete, they were augmented by prices obtained from salesmen. The studies were made while many of the materials were not in production and while an erratic rise in building costs was in progress.

The charts for wall, floor, and roof construction were prepared to facilitate the selection of the most suitable building method for specific plant needs. They include more inexpensive building methods than elaborate ones. The framing analysis was worked out to aid in the determination of column spacing. The required pounds of steel per square foot are given for different bay sizes and roof loads as indication of relative costs. Diagrams of the mechanical plant consisting of lighting, heating, ventilation, and piping distribution were also prepared to indicate the diverse methods of installation available and to consider their relative merits.

In the construction analysis all of the 18 students in my studio participated, each investigating and drawing up a part, and all working together in the interest of obtaining as complete a picture of the problems arising in the building of industrial plants as the time and other limitations permitted. The uniformity of the presentation was largely due to E. N. Turano's efforts and organizational ability.

The analysis was applied by the students to a specific type of industrial building for which they had developed designs: a plant for the production of hand tools. These student designs paid particular attention to the provision of optimum working conditions, workers' comfort and recreation (p. 112).

Photo by Paul Southwick, Harvard Univ. News Office

Typical scene during a conference and judgment of student work, when student peers join with professors in a session of criticism and defense. At the right, Prof. Bogner; at the left, seated, are Prof. Walter Gropius and Dr. Metcalf, Director of Widener Library

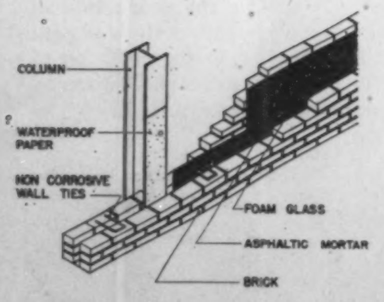
WALL CONSTRUCTION ANALYSIS

TYPE		ECONOMIC						INSTALLATION			FUNCTIONAL				
	MATERIAL	COST/SQ.FT		WT./SQF	HEAT CONDUCT	MAINT	FIRE RESIST	SALV	METHOD OF ATTACH.	GAUGE THICK	WEATHER RESIST	ACOUSTIC	LOAD BEARING	GENERAL DURABIL.	REMARKS
		MAT.	LABOR												
MASONRY	① BRICK CAVITY WALL FOAM GLASS CORE	89	42	81 75	36	NONE	4 HR	10%	MASONRY CONST	9"	EXCEL	POOR	NON	EXCEL	GOOD APPEARANCE, PLEASANT NATURAL COLOR
	② CONCRETE BLOCKS	20	12	49	40	RE-POINT JOINTS	4HR D-2	30%	MORTAR	8"	100%	FAIR	700 PSI	INDEFNITE	UNIT SIZE 8"x8"x16"
	③ CINDER BLOCKS	216	13	45	30	•	• B-4	•	MORTAR	12"	•	GOOD	450 PSI	•	UNIT SIZE 8"x12"x16"
	④ GUNITE (STEEL FRAME)	65	25	18	084	EXPANS JOINTS	3 HR	POOR	2x2 MESH ON VERTICAL CHAN'LS	3"	EXCEL. BMS94 '42	POOR	NON	EXCEL BMS94 '42	ARCHITECTURAL APPEARANCE EXCELLANT NO FORMS OR HEAVY LIFTS FOR CONCRETE
	⑤ GUNITE (T C BACKING)	27	27	30	52	EXPANS. JOINTS	3 HR	POOR	2x2 MESH ON BONDED CHAN'LS	5-1/2"	EXCEL BMS94 '42	GOOD	LIGHT- 1 STORY	EXCEL BMS94 '42	LIGHT WEIGHT OF 4 - GOOD FOR SPANDRELS 5 SELF-SUPPORTING - NOISE RESISTANT
PANEL CONSTRUCTION	⑥ CEMESTO BOARD	35	20	4 5.3	25 15	NONE	2 HR	100%	BOLTED TO STEEL GIRTS	1-1/8	EXCEL	GOOD	NON	EXCEL	SMOOTH SURFACE, PANELS 4X8', BATTENS AT JOINTS
	⑦ CORRUGATED TRANSITE	274	136	542	28	NONE	NON-COMBUST	100%	BOLT & CLIP TO STEEL FRAME	7/16"	EXCEL	FAIR	NON	INDEFINITE	LIGHT GREY COLOR, SMOOTH, DULL, UNIFORM FINISH CAN BE PAINTED DRY WALL CONSTRUCTION
	⑧ FLAT TRANSITE	424	186	292	28	NONE	NON-COMBUST.	100%	BOLT & CLIP TO STEEL FRAME	1/8"	EXCEL	POOR	NON	INDEFINITE	LIGHT GREY COLOR, SMOOTH, DULL, UNIFORM FINISH BRITTLE CAN BE PAINTED DRY WALL CONST
	⑨ ROBERTSON SINGLE "Q" UNIT	1.25	25	5 3 12 3	1½"-0 14• 2"-0.115•	NONE	2 HR	100%	RH BOLTS TO GIRTS 12" OC. WELD AT BOTTOM	BACK 10-16 FRONT 12-20	100% MOISTURE BARRIER	POOR	LOAD BEARING	INDEFINITE	GOOD ARCHITECTURAL APPEARANCE-EXTERIOR & INTERIOR FINISH - FLUTED OR FLAT - ERECTION 34
	⑩ ROBERTSON 2 CELL "Q" UNIT	1 25	25	13.5	2½ 098•	NONE	2 HR	100%	ANGLES 12" OC - OR RIVET CLIPS TO GIRT	12-20	INSIDE & OUTSIDE	FAIR	UP TO 2 STORIES	INDEFINITE	TO 50 SQ FT/MIN FINISH BLACK OR GRAY BAKED ENAMEL - LENGTHS FROM 12'-0" TO 25'-0"
	⑪ ROBERTSON V-BEAM GALBESTOS	28	22	3	u - 85	NONE	NON-COMBUST.	100%	STRAPPED TO GIRTS	20	EXCEL.	POOR	NON	30 YRS.	CLEAN, INDUSTRIAL APPEARANCE, QUICK ERECTION ASPHALT-IMPREGNATED ASBESTOS FELT OVER METAL
	⑫ ROBERTSON INSULATED GALBESTOS	50	30	6	k - 16	NONE	NON-COMBUST.	100%	T-BARS & GIRTS	22	EXCEL	GOOD	NON	30 YRS.	COMES V-BEAM, MANSARD, OR CORRUGATED IN BLACK, MAROON, OR ALUMINUM FINISH

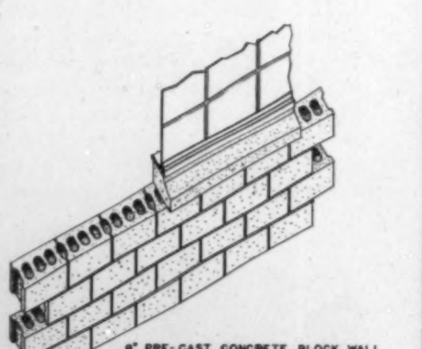
FLOOR CONSTRUCTION ANALYSIS

① CONCRETE, INTEGRAL WEARING SURFACE	02	07	72	66	WASH	NON-COMBUS	NONE	INTEGRAL	½"	EXCEL	POOR	500 PSI	GOOD	BRITTLE, MOST DIFFICULT TO REPAIR, STAND TYPE CONST, LOWEST MAINT COST
② WOOD BLOCK	42	08	10.5	15	OIL	FIRE RESIST.	100%	SET IN TAR, PITCH, ASPHALT, OR MORTAR	1" 3½"	GOOD	FAIR	5000 PSI	GOOD	EASY TO REPAIR, MORE RESILIENT, QUIETER, WARMER, THAN OTHER TYPES
③ BITUMINOUS MACADAM	12	06	24	40	WASH	FIRE RESIST.	NONE	INTEGRAL	2"	WATER-PROOF	POOR	90 PSI	FAIR	ACID RESISTANT

Illustrations and tables on this and following pages are intended to show only a method of student analysis and presentation; see page 103 for explanation

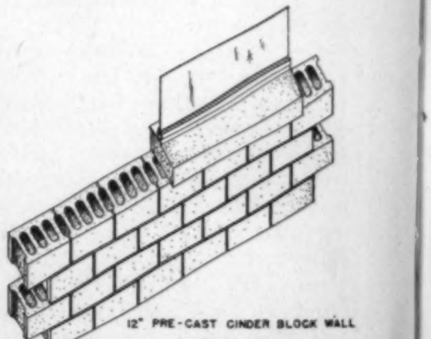

COLUMN
WATERPROOF PAPER
NON CORROSIVE WALL TIES
FOAM GLASS
ASPHALTIC MORTAR
BRICK

①



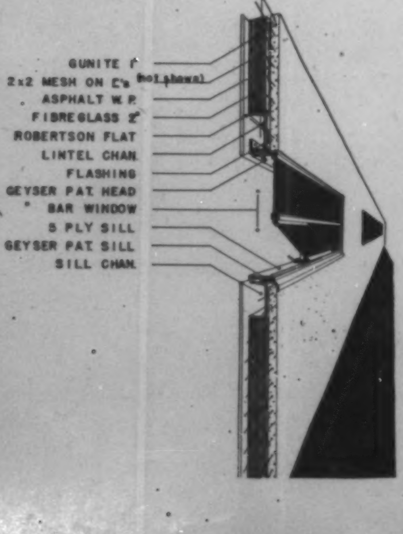
8" PRE-CAST CONCRETE BLOCK WALL
8"x 8"x 16"

②

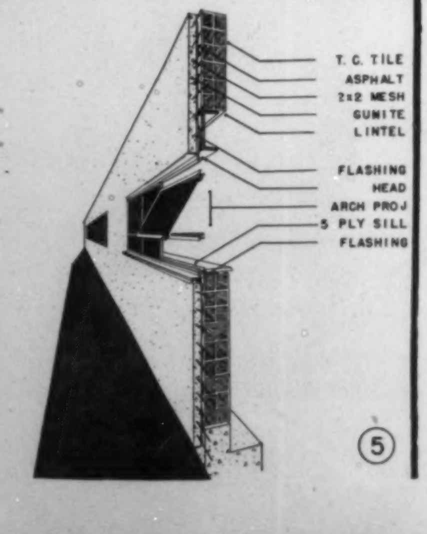


12" PRE-CAST CINDER BLOCK WALL
8"x 12"x 16"

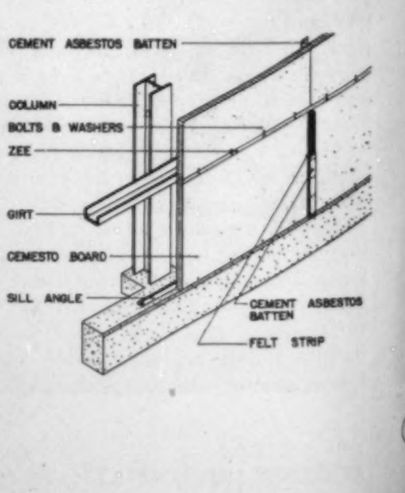
③


GUNITE 1"
2x2 MESH ON C's (not shown)
ASPHALT W.P.
FIBREGLASS 2"
ROBERTSON FLAT
LINTEL CHAN.
FLASHING
GEYSER PAT. HEAD
" BAR WINDOW
5 PLY SILL
GEYSER PAT. SILL
SILL CHAN.

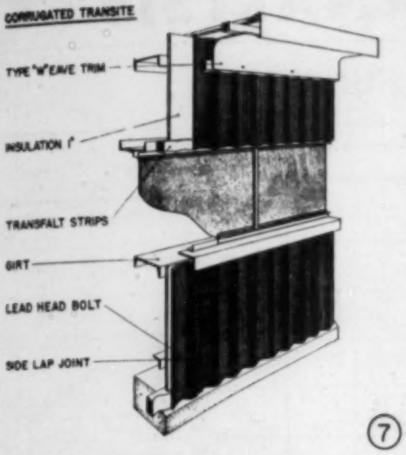
④


T. C. TILE
ASPHALT
2x2 MESH
GUNITE
LINTEL
FLASHING
HEAD
ARCH PROJ
5 PLY SILL
FLASHING

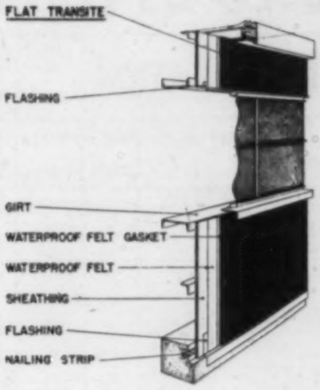
⑤


CEMENT ASBESTOS BATTEN
COLUMN
BOLTS & WASHERS
ZEE
GIRT
CEMESTO BOARD
SILL ANGLE
CEMENT ASBESTOS BATTEN
FELT STRIP

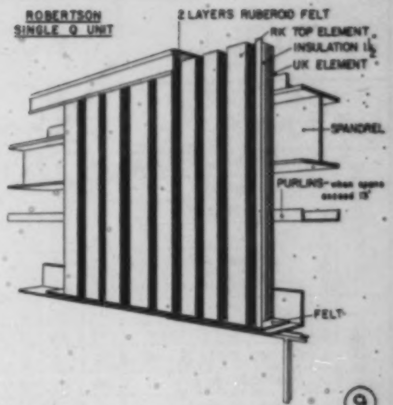
⑥


CORRUGATED TRANSITE
TYPE "W" EAVE TRIM
INSULATION 1"
TRANSFALT STRIPS
GIRT
LEAD HEAD BOLT
SIDE LAP JOINT

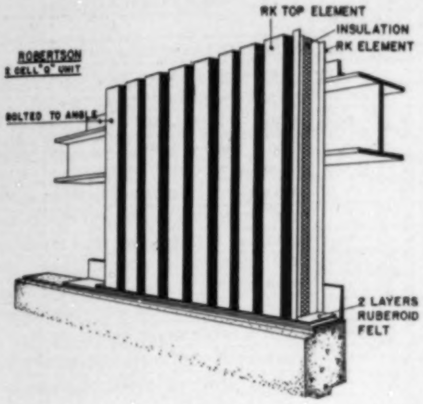
⑦


FLAT TRANSITE
FLASHING
GIRT
WATERPROOF FELT GASKET
WATERPROOF FELT
SHEATHING
FLASHING
NAILING STRIP

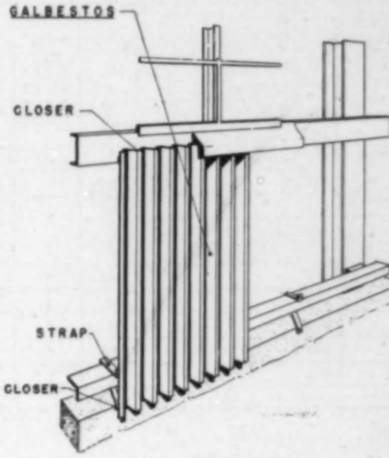
⑧


ROBERTSON
SINGLE Q UNIT
2 LAYERS RUBEROID FELT
RK TOP ELEMENT
INSULATION 1½"
UK ELEMENT
SPANDREL
PURLINS—when spans exceed 13'
FELT

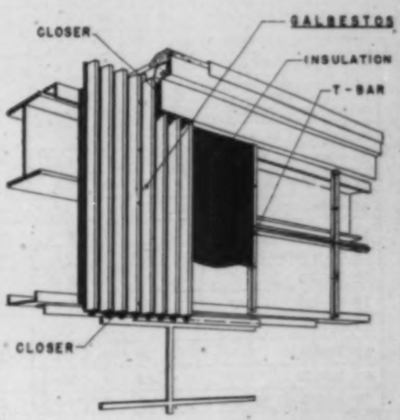
⑨


RK TOP ELEMENT
INSULATION
RK ELEMENT
ROBERTSON
2 CELL "Q" UNIT
BOLTED TO ANGLE
2 LAYERS
RUBEROID
FELT

⑩

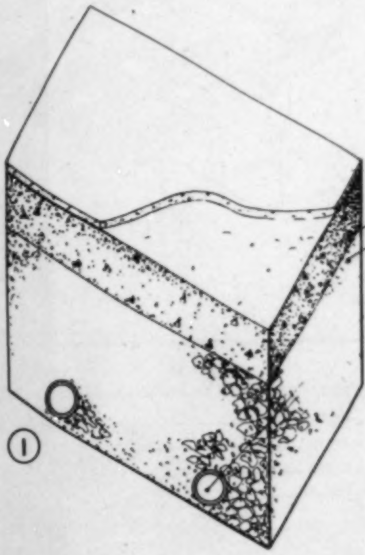

GALBESTOS
CLOSER
STRAP
CLOSER

⑪

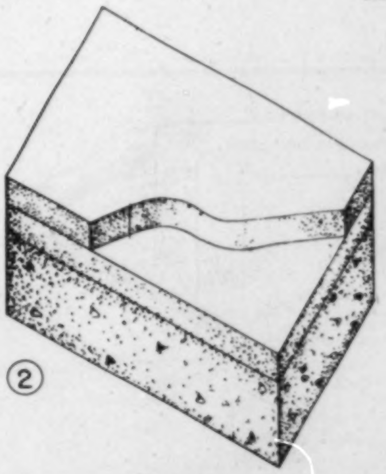

CLOSER
GALBESTOS
INSULATION
T-BAR
CLOSER

⑫

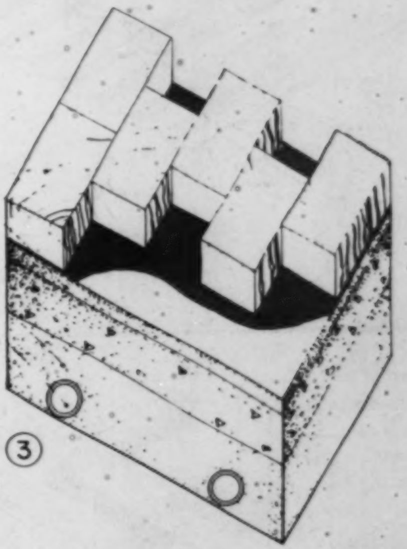
FLOOR CONSTRUCTION


½" INTEGRAL
WEARING SURFACE
4" STONE CONCRETE
12" CINDERS
DRAIN

①


2" WEARING SURFACE
SHEET ASPHALT
2" BINDER COURSE
6" CONCRETE

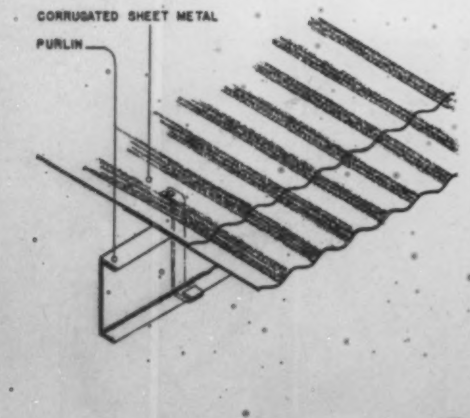
②


3" WOOD BLOCKS
TAR OR ASPHALT
1" CEMENT FINISH
4" CONCRETE
6" CINDERS
DRAIN

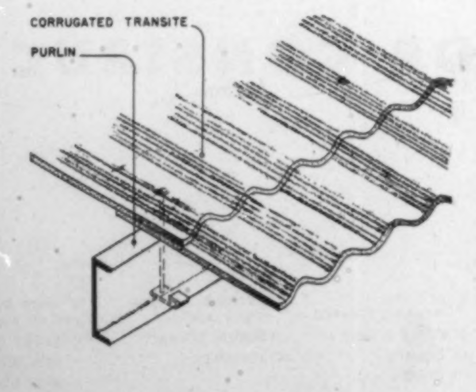
③

ROOF CONSTRUCTION ANALYSIS

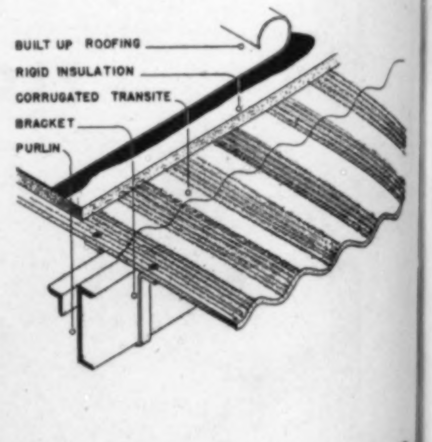
TYPE		ECONOMIC						INSTALLATION			FUNCTIONAL				
	MATERIAL	COST		WT/SQFT	HEAT CONDUCTIV	MAINT	FIRE RESISTANCE	SPAN	METHODS OF ATTACHING	THICK or GUAGE	WEATHER RESISTANCE	ACOUSTIC	LOAD BEARING	GENERAL DURABILITY	REMARKS
		MAT	LABOR												
MISCELLANEOUS	1 CORR. SHEET METAL, NO INS	.06	14	2⅓	1.5	MODERATE	GOOD	5'9"	CLIPS AND BOLTS	18	FAIR	POOR	40 LB/ SQ. FT.	FAIR	MIN. SLOPE 4-12 AVAILABLE 12 TO 28 GAUGE
	2 CORR ASBESTOS, " "	20	.10	4½	.36	LOW	EXCEL.	4'6"	" " "	7/16"	EXCEL.	"		GOOD	MIN. SLOPE 3-12 " - 4.2" & 2⅝" PITCH
	3 CORR ASBESTOS	41	.12	9½	.11	LOW	"	4'6"	" " "	7/16	GOOD	"		"	USED AS ROOF DECK, BUTT JOINTS
	4 WOOD DECK	.35	27	13.0	.16	MODERATE	POOR	8'-0"	NAILS AND CLIPS	2"	GOOD	FAIR		"	
	5 STRUCTURAL INSULATION	20	10	11.3	.15	LOW	FAIR	4'0"	CLIPS AND BOLTS	2"	GOOD	"		FAIR	MAY BE THERMAX OR CEMESTO
	6 ROBERTSON GALBESTOS	.28	.11	3.5	.14	LOW	GOOD	6'6"	BARS AND STRAPS	18	GOOD	"		"	COLORS, BLACK, MAROON, ALUMINUM 4 SHAPES
PRE-CAST CONCR.	7 GYPSUM T&G PLANK	.19	10	15	.53	NONE	4 HR	7'	CLIPS	2½"	FAIR	NONE	75LB	GOOD	UNITS 2"x 15"x 6'
	8 GYPSUM SHORT SPAN	17	.23	17	49	"	"	2'-6"	MORTAR & TEE'S	3"	"	"	"	"	" 3"x 12"x 30"
	9 GYPSUM STEEL PLANK	.21	.10	12	.53	"	"	7'	TONGUE & GROOVE	2"	"	"	"	"	" 2"x 15"x 10'
	10 CONCRETE PLANK	.26	.08	18	.23	"	"	8'	MORTAR JOINTS	2¾"	EXCEL	FAIR	60LB	EXCEL	" 2¾"x 16"x 8'
	11 CONCRETE TILE	.24	.07	14	.23	"	"	6'	" "	"	"	"	"	"	" 2¾"x 24"x 6'-4"
	12 FLEXCORE CONC. PLANK	.28	.08	40	.20	"	"	22'	" "	6"	"	"		"	" 6"x 12"x 6' TO 22'
POURED GYP. OR CONCR.	13 SHEEETROCK PYROFILL	23	12	15	17	LOW	EXCEL	13'8"	SUB-PURLINS	3"	GOOD	GOOD	45lb/S.F	GOOD	SETS QUICKLY LIGHT REFLETING
	14 ROB-Q-FK AND CONC	48	18	35	24	NONE	2 HR	19'0"	POURED ONTO PANEL	4"	EXCEL	POOR	72 "	EXCEL.	
	15 SUSPENDED GYP. OR LWT.CON.	22	.09	16	15	LOW	4 HR	10'0"	TEMPORARY FORMS	4"	GOOD	FAIR	40 "	GOOD	EXCELENT F.PR. BUT LOW STRUCT. VALUE
	16 CONCRETE ON MTL. LATH	.21	.10	26	21	NONE	GOOD	30"	POURED ONTO LATH	2"	GOOD	"	" "	GOOD	ALL MATERIALS REQUIRING FORMS ADD .070 PER SQ.FT.
	17 CONC. SLAB, 2WAY REINF	26	.11	56	21	"	EXCEL	20'0"	FORMS	4½"	EXCEL	POOR	" "	EXCEL.	FOR COST OF FORM, ERECTION AND STRIPPING
	18 RIB. SLAB, TIN PAN CONST.	27	.12	65	21	"	"	28'0"	FORMS	3"	"	"	" "	"	RENTED FORMS, LABOR & SKILL SAVING
	19 CONCRETE SHELL	SEE REMKS			21	"	"	40'0"	"TROJAN HORSE" FORMS	3"	"	"		"	ON LARGE 1 STORY PLANTS COST MUCH UNDER WOOD OR STEEL. WT OF STEEL 31 COMP. TO 5.8 FOR CONC. FR SLAB & 14 FOR STRUCT STL
METAL PLANKS AND PANELS	20 FENESTRA TYPE A	40	14	59	24	NONE	2 HR	15'-0"	CLIP OR WELD TO PURLINS	18	GOOD	POOR	FOR THIS ANALYSIS ALL DECKS WERE FIGURED AT 40#/SQ.FT. ROOF LD. THIS GIVES A SPAN VARIABLE.	20 YRS.	ALL STEEL DECK LEND THEMSELVES TO FAST
	21 HOLORIB SANACOUSTIC	38	13	32	24	NONE	"	6'-6"	"	18	"	EXCEL.		"	ERRECTION A CLEAN ARCHITECTURAL APPEAR-
	22 ROBERTSON DECK Nº-12	32	10	37	23	NONE	"	15'-0"	"	20	"	POOR		"	ENCE IS ACHIEVED WHERE RIBS OR FLAT SUR-
	23 " FK DECK	42	14	67	24	NONE	"	20'-0"	"	18	"	"		"	FACES ARE LEFT EXPOSED. RIBS BECOME AVAIL-
	24 U.S. GYPSUM STEEL DECK	30	09	32	24	NONE	"	8'-0"	"	18	"	"		"	ABLE TO RECEIVE ELECTRICAL CONDUITS AND
	25 METRO- "	30	11	29	.23	NONE	"	7'-6"	"	22	"	"		"	OTHER UTILITIES MOST TYPES COME IN MULTI-
	26 MILCOR "	31	12	31	.24	NONE	"	7'-6"	"	18	"	"		"	PLES OF 6" STARTING AT 4'-0" CARE SHOLD BE
	27 CECO "	31	12	31	.24	NONE	"	7'-6"	"	18	"	"		"	TAKEN IN CASES WHERE PROTECTIVE PAINT OR
	28 TRUSCON "	30	10	25	.23	NONE	"	8'-0"	"	20	"	"		"	ASHPHALT IS USED IN PREFABRICATION- CORROS-
	29 MAHON "	32	12	32	23	NONE	"	7'-6"	"	20	"	"		"	ION WILL START ON UNPROTECTED SURFACES
	30 WHEELING LONG SPAN	35	13	40	.24	NONE	"	14'-0"	"	16	"	"		"	



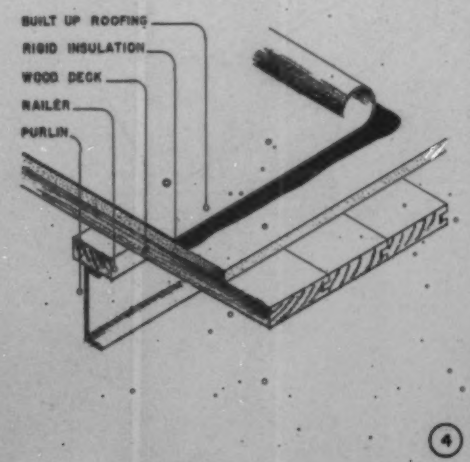
①



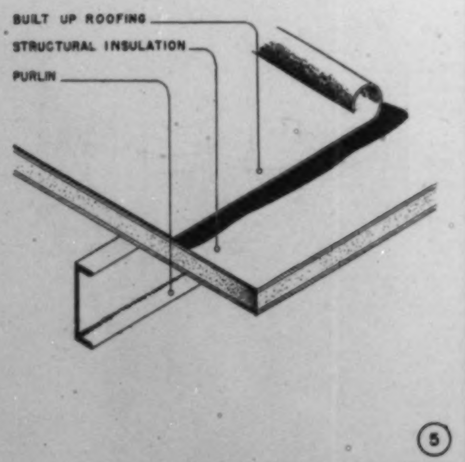
②



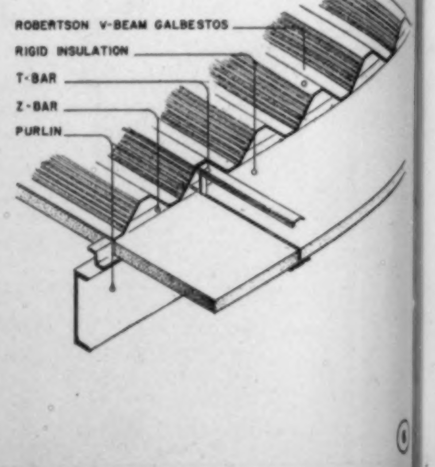
③



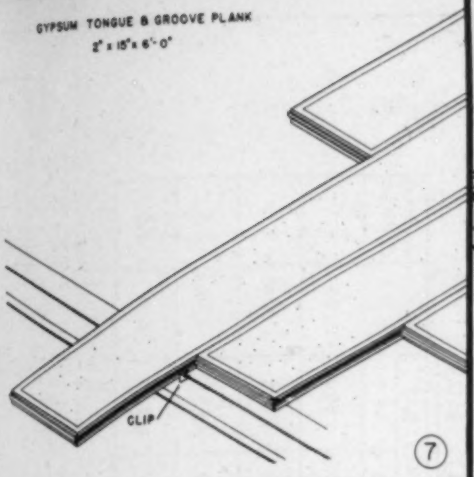
④



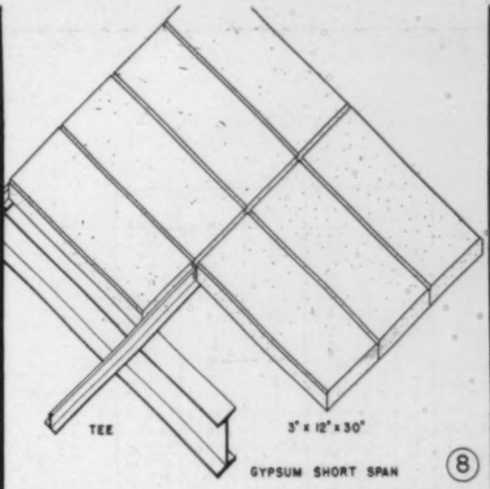
⑤



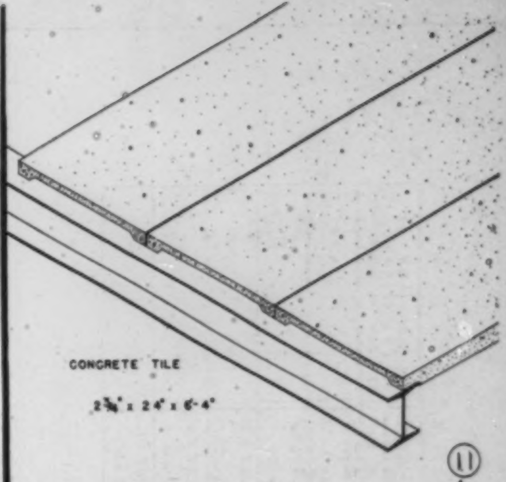
⑥


GYPSUM TONGUE & GROOVE PLANK
2" x 15" x 6'-0"
CLIP

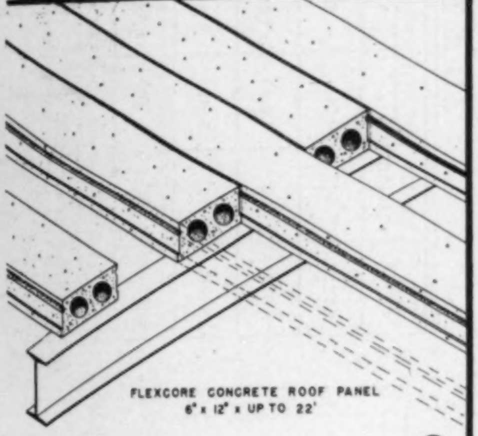
⑦


TEE
3" x 12" x 30"
GYPSUM SHORT SPAN

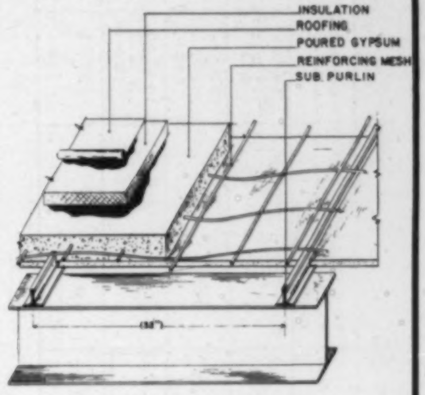
⑧


CONCRETE TILE
2¾" x 24" x 6'-4"

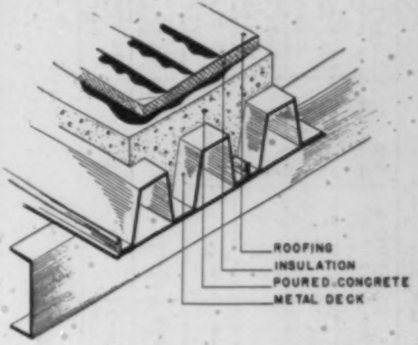
⑪


FLEXCORE CONCRETE ROOF PANEL
6" x 12" x UP TO 22'

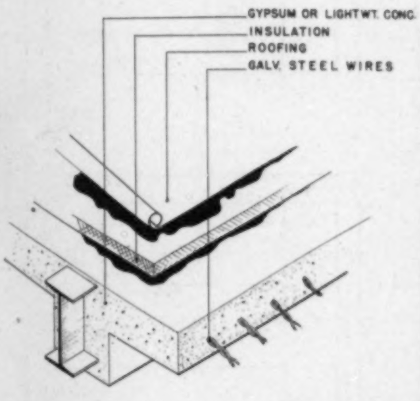
⑫


INSULATION
ROOFING
POURED GYPSUM
REINFORCING MESH
SUB. PURLIN
(32")

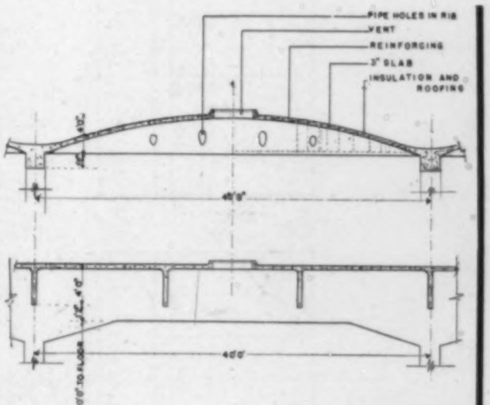
⑬


ROOFING
INSULATION
POURED CONCRETE
METAL DECK

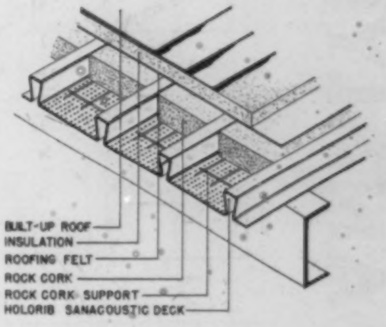
⑭


GYPSUM OR LIGHTWT. CONC.
INSULATION
ROOFING
GALV. STEEL WIRES

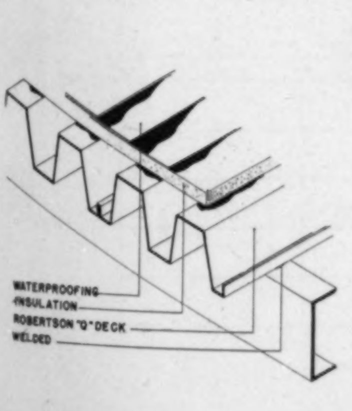
⑮


PIPE HOLES IN RIB
VENT
REINFORCING
3" SLAB
INSULATION AND ROOFING
48'8"
40'0"
20'0" TO FLOOR

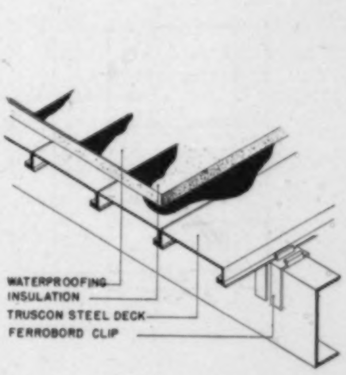
⑲


BUILT-UP ROOF
INSULATION
ROOFING FELT
ROCK CORK
ROCK CORK SUPPORT
HOLORIB SANACOUSTIC DECK

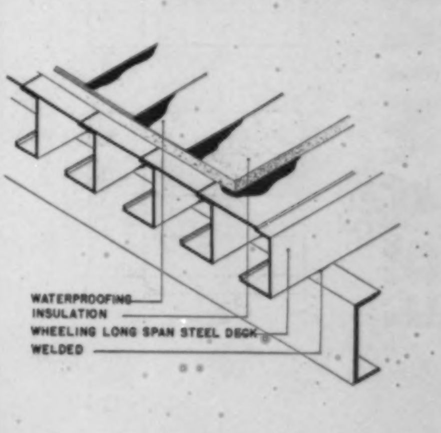
㉑


WATERPROOFING
INSULATION
ROBERTSON "Q" DECK
WELDED

㉒

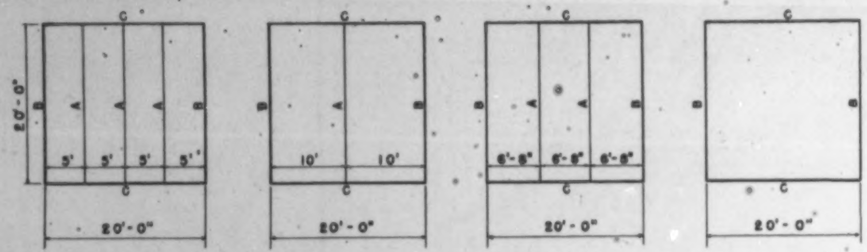

WATERPROOFING
INSULATION
TRUSCON STEEL DECK
FERROBORD CLIP

㉘


WATERPROOFING
INSULATION
WHEELING LONG SPAN STEEL DECK
WELDED

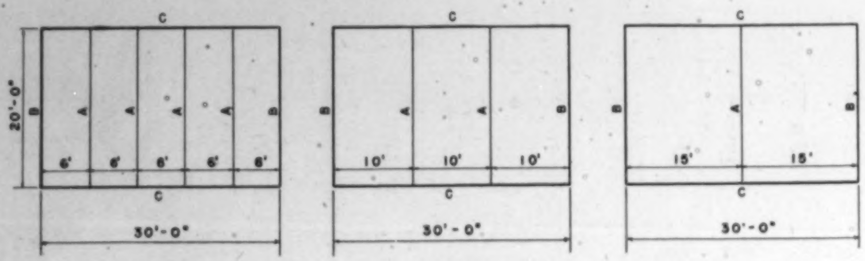
㉚

FRAMING ANALYSIS


C
B
A
5'
5'
5'
5'
20'-0"
10'
10'
6'-8"
6'-8"
6'-8"
20'-0"
20'-0"
20'-0"
20'-0"

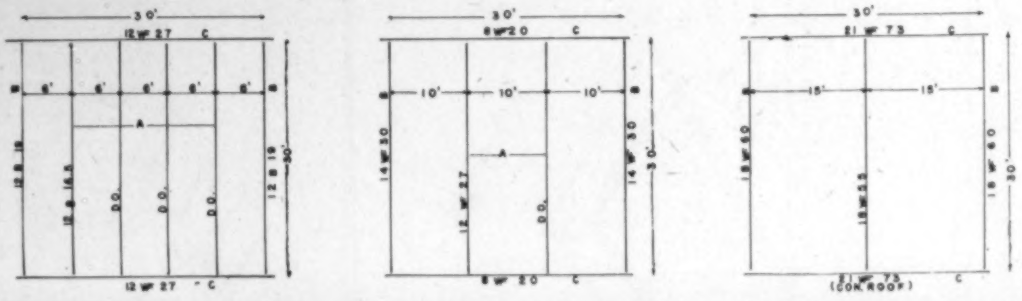
20 x 20

ROOFING	PURLIN SPACING IN FEET	WT. OF MEMBERS PER BAY			WT. OF COLUMN PER BAY	WT. OF STEEL PER SQ. FT.
		A	B	C		
STEEL	5'	10 JR 9 540	14 WF 30 600	14 WF 30 600	680	6.05
DO.	10'	12 B 14 280	14 WF 30 600	14 WF 34 680	680	5.6
DO.	20'	0	16 WF 36 720	12 WF 27 540	680	4.85
GYPSUM	6'-8"	12 JR 11.8 472	14 WF 34 680	14 WF 34 680	680	6.27
CONRETE	20'	0	16 WF 40 800	12 WF 27 540	680	5.05


C
B
A
20'-0"
6'
6'
6'
6'
6'
30'-0"
10'
10'
10'
30'-0"
15'
15'
30'-0"

20 x 30

ROOFING	PURLIN SPACING IN FEET	WT. OF MEMBERS PER BAY			WT. OF COLUMN PER BAY	WT. OF STEEL PER SQ. FT.
		A	B	C		
STEEL	6'	10 JR 9 720	14 WF 30 600	18 WF 55 1650	680	6.08
DO.	10'	12 B 14 840	14 WF 30 600	18 WF 64 1920	680	6.73
DO.	15'	12 B 19 380	14 WF 30 600	21 WF 68 2040	680	6.16
CONCRETE	15'	14 WF 30 600	16 WF 36 720	27 WF 102 3060	680	8.43

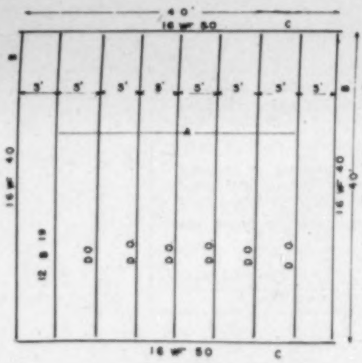

30'
12 WF 27
C
B
6'
6'
6'
6'
6'
A
12 B 19
12 B 16.5
DO.
DO.
DO.
12 B 19
30'
12 WF 27
C
30'
8 WF 20
C
10'
10'
10'
A
14 WF 30
12 WF 27
DO.
14 WF 30
30'
8 WF 20
C
30'
21 WF 73
C
15'
15'
18 WF 60
18 WF 55
18 WF 60
30'
21 WF 73
(CON. ROOF)
C

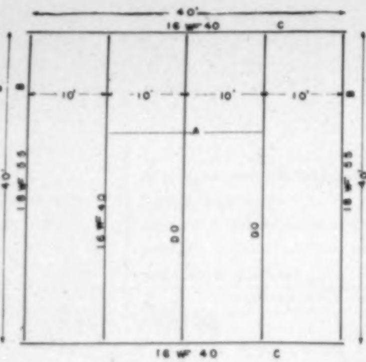
30 x 30 Bay

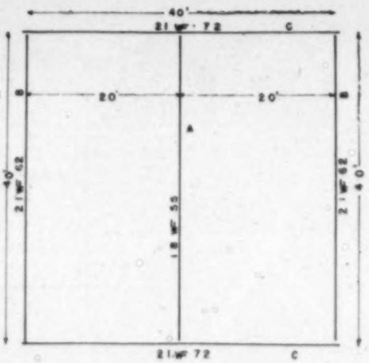
ROOFING	PURLIN SPACING	WT. OF MEMBERS / BAY			lb. of Col. per. BAY	lb. of Steel / Ft. of Floor
		A	B	C		
STEEL	6'	1140	1625	1920	698	6.1
DO.	10'	1800	1200	1625	698	5.9
CON.	15'	3 600	4 400	1625	698	11.5
GYPSUM	6'	1 625	1 625	2 640	698	7.3

Plant area = 112 BAYS @ 900 sq. ft. ea. = 100 800 sq. ft.
No. of interior columns ——— 91
No. of columns per. bay ——— 1.2
Total area lost to columns @ 12 sq. ft. per. column = 1 080 sq. ft.

40 x 40 Bay


40'
16 WF 50
C
B
5'
5'
5'
5'
5'
5'
5'
5'
A
16 WF 40
12 B 19
DO
DO
DO
DO
DO
DO
16 WF 40
40'
16 WF 50
C

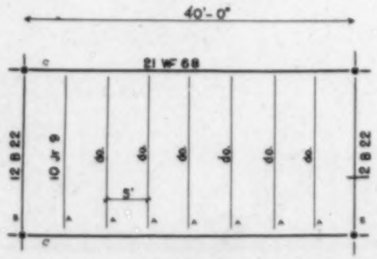

40'
16 WF 40
C
B
10'
10'
10'
10'
B
A
18 WF 55
16 WF 40
DO
DO
18 WF 55
40'
16 WF 40
C

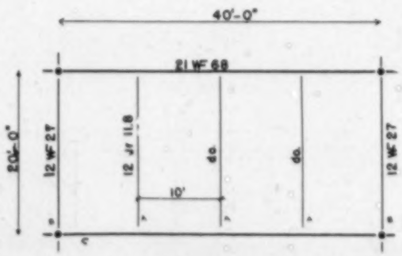

40'
21 WF 72
C
B
20'
20'
B
A
21 WF 62
18 WF 55
21 WF 62
40'
21 WF 72
C

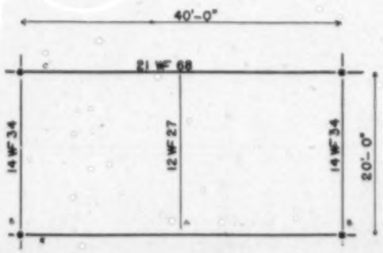
ROOFING	PURLIN SPACING	WT OF MEMBERS / BAY A	B	C	lb.of Col. / BAY	lb.of Steel / Ft.of Floor
STEEL	5	5 320	3 200	4 000	610	8 2
DO	10'	2 280	4 400	3 200	610	6 5
DO	20'	760	4 960	5 760	610	7 55
CON.	20'	3 760	8 160	8 160	610	12 9
GYPSM	5'	3 200	3 600	3 600	610	6 79

Plant area = 66 BAYS @ 1600 sq ft ea = 105 600 sq ft
No interior columns ———— 50
No.of columns per bay ———— 1 27
Total area lost to columns @ 12 sq. ft per column = 760 sq. ft.

20'× 40'


40'-0"
21 WF 68
C
12 B 22
10 Jr 9
do.
do.
do.
do.
do.
5'
A
12 B 22
20'-0"
C

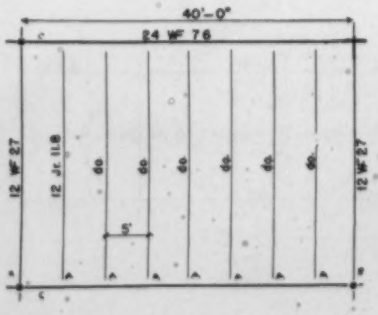

40'-0"
21 WF 68
C
12 WF 27
12 Jr 11.8
do.
do.
10'
A
12 WF 27
C

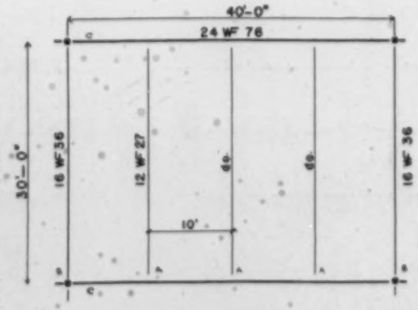

40'-0"
21 WF 68
C
14 WF 34
12 WF 27
A
14 WF 34
20'-0"

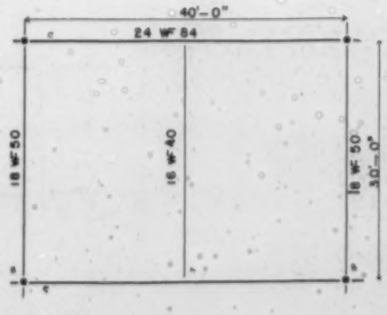
ROOFING	PURLIN space in feet	WT. of MEMBERS / BAY A	B	C	lbs. of COL / BAY	WT. of steel per sq.ft.
STEEL PLANK	5'	1260	440	2720	680	6.9
	10	707	540	2720	680	6.3
	20	540	660	2720	680	6.27
CONCRETE	20	720	900	408	680	8.7
GYPSUM PLANK	5	1260	540	2920	680	7.34

PLANT AREA 126 Bay @ 800 sq.ft. = 100,800 sq.ft.
No. of interior Columns —— 100
No. of columns per bay —— 1.22
total area LOST to column at 12 sq.ft. per col. ... . 1200 sq.ft.

30'× 40'


40'-0"
24 WF 76
C
12 WF 27
12 Jr 11.8
do.
do.
do.
do.
do.
do.
5'
A
12 WF 27
30'-0"
C

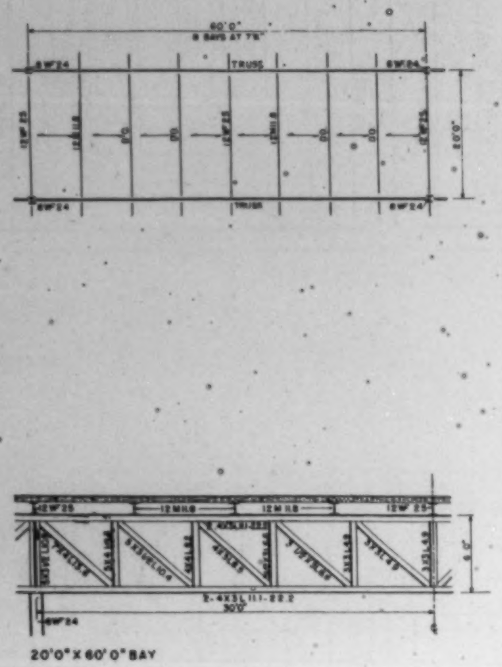

40'-0"
24 WF 76
C
16 WF 36
12 WF 27
do.
do.
10'
A
16 WF 36
30'-0"
C


40'-0"
24 WF 84
C
18 WF 50
16 WF 40
18 WF 50
30'-0"
C

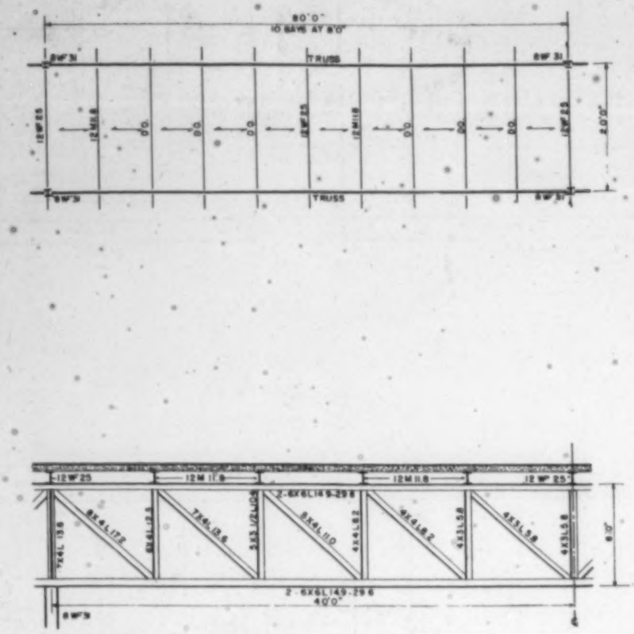
ROOFING	PURLIN space in feet	WT. of MEMBERS / BAY A	B	C	lbs. of COL / BAY	WT. of steel per sq.ft.
STEEL PLANK	5	2940	810	3040	697	6.8
	10	2430	1080	3040	697	6.58
	20	1200	1500	3360	697	6.15
CONCRETE	20	1860	2190	5960	789	9.85
GYPSUM PLANK	5	3950	1080	3360	697	8.27

PLANT AREA 84 Bay @ 1200 sq.ft. = 100,800 sq.ft.
No. of Interior Columns —— 65
No. of columns per bay ———— 1.25
total area LOST to column at 12 sq.ft. per col ... . 780 sq.f

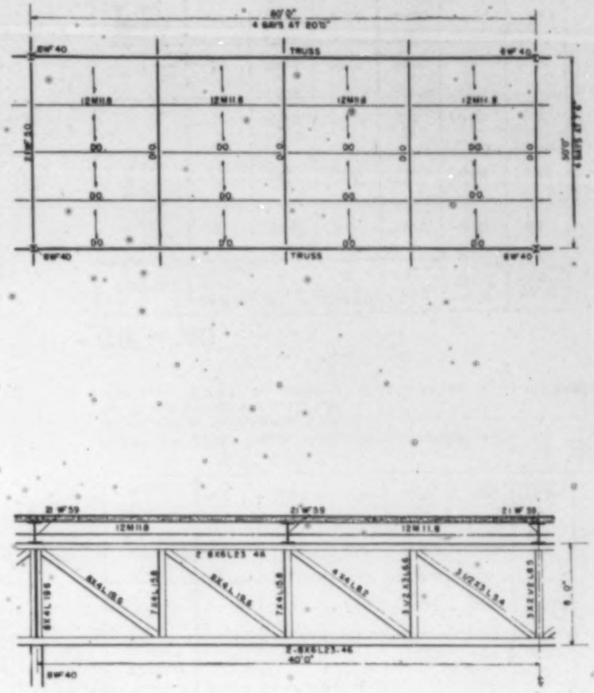
FRAMING ANALYSIS


60'0"
8 BAYS AT 7'6"
8WF24
TRUSS
12W25
12M11.8
20'0"
12W 25
12M11.8
2-4X3L111-22.2
30'0"
8WF24
6'0"

20'0" X 60'0" BAY


80'0"
10 BAYS AT 8'0"
8WF31
TRUSS
12W25
12M11.8
20'0"
2-6X6L149-29.6
7X4L13.6
6X4L17.2
8X4L11.0
6X4L8.2
4X3L5.8
40'0"
8'0"

2'0'0" X 80'0" BAY


80'0"
4 BAYS AT 20'0"
8WF40
TRUSS
12M11.8
21WF30
30'0"
21WF59
2-8X6L23.46
8X4L19.6
7X4L15.8
4X4L8.2
3 1/2X3 L5.4
40'0"
8'0"

30'0" X 80'0" BAY

TRUSS FRAMING

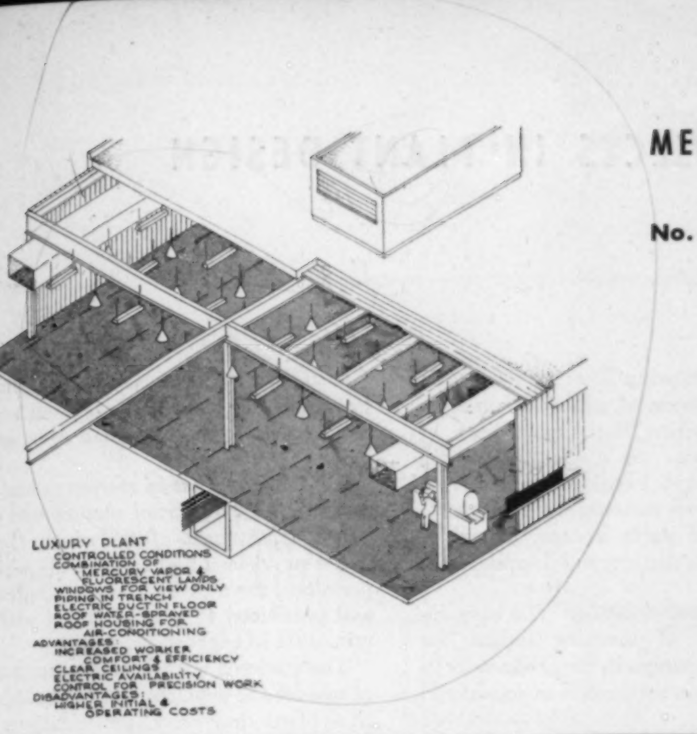
ADVANTAGES	DISADVANTAGES
FEWER COLUMNS	MORE STEEL REQUIRED
SMALLER FLOOR AND ROOF AREAS	GREATER OVERALL BUILDING VOLUMN
MORE EFFICIENT MACHINE LAYOUT	MORE WALL AND PARTITION AREA
LIGHTS, PIPES, ETC. LOCATED IN TRUSS WHERE OUT OF WAY BUT EASILY SERVICED BY CATWALKS	GREATER FABRICATION COST
FEWER COLUMN FOOTINGS	MORE STRUCTURAL MEMBERS TO MAINTAIN
READILY ADAPATABLE TO MONITOR TYPE NATURAL LIGHTING	

BAY SIZE	20'0" X 60'0"	20'0" X 80'0"	30'0" X 80'0"
LIVE LOAD AND ROOFING	50 LBS/SQ.FT.	50 LBS/SQ.FT.	50 LBS/SQ.FT.
PURLIN SPACING	7'6"	8'0"	7'6"
SIZE OF PLANT	100,000 SQ. FT.	100,000 SQ.FT.	100,000 SQ.FT.
NUMBER OF INTERIOR COLUMNS	60	40	26
AREA LOST TO COLUMNS AT 12 SQ.FT./COL.	720 SQ.FT.	480 SQ.FT.	312 SQ.FT.
WT. STEEL / SQ. FT. FLOOR AREA	6.9 LBS/SQ.FT.	8.75 LBS/SQ.FT.	10.3 LBS/FT.SQ.

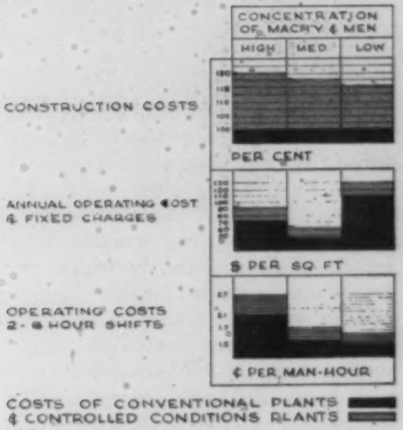
TRUSSES

MECHANICAL PLANT

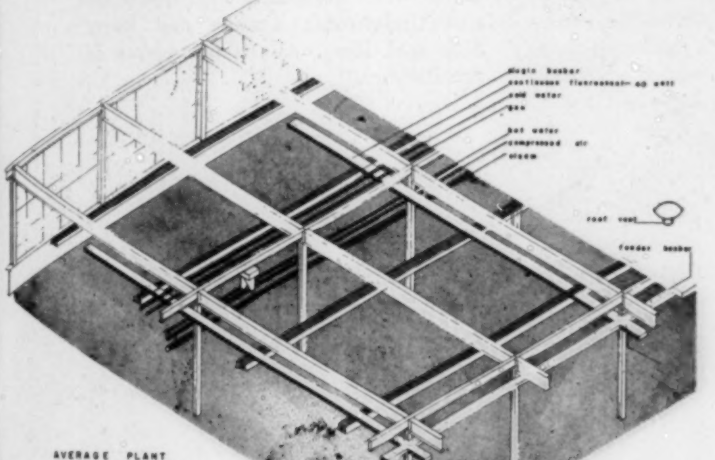
No. 1. FOR THE LUXURY PLANT



LUXURY PLANT
CONTROLLED CONDITIONS
COMBINATION OF
MERCURY VAPOR &
FLUORESCENT LAMPS
WINDOWS FOR VIEW ONLY
PIPING IN TRENCH
ELECTRIC DUCT IN FLOOR
ROOF WATER-SPRAYED
ROOF HOUSING FOR
AIR-CONDITIONING
ADVANTAGES:
INCREASED WORKER
COMFORT & EFFICIENCY
CLEAR CEILINGS
ELECTRIC AVAILABILITY
CONTROL FOR PRECISION WORK
DISADVANTAGES:
HIGHER INITIAL &
OPERATING COSTS



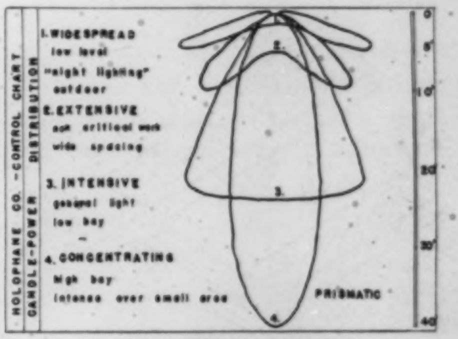
No. 2. FOR THE AVERAGE PLANT


plug-in busbar
continuous fluorescent— ac unit
cold water
gas
hot water
compressed air
steam
roof vent
feeder busbar

AVERAGE PLANT
OVERHEAD DISTRIBUTION

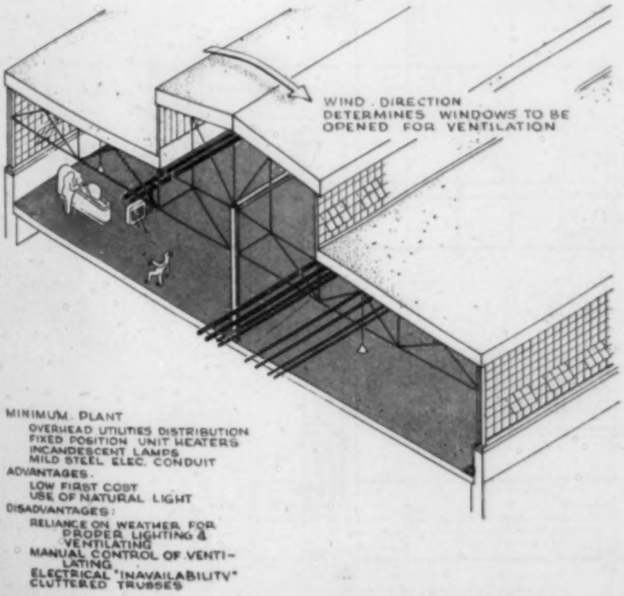
ADVANTAGES:
low cost
flexibility

DISADVANTAGES:
unsightly piping & wiring
minimum provisions for
temperature control.



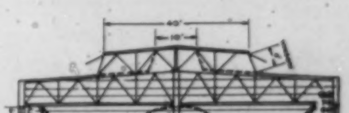
ILLUMINATION

No. 3. FOR THE MINIMUM PLANT


WIND DIRECTION
DETERMINES WINDOWS TO BE
OPENED FOR VENTILATION

MINIMUM PLANT
OVERHEAD UTILITIES DISTRIBUTION
FIXED POSITION UNIT HEATERS
INCANDESCENT LAMPS
MILD STEEL ELEC. CONDUIT
ADVANTAGES.
LOW FIRST COST
USE OF NATURAL LIGHT
DISADVANTAGES:
RELIANCE ON WEATHER FOR
PROPER LIGHTING &
VENTILATING
MANUAL CONTROL OF VENTILATING
ELECTRICAL "INAVAILABILITY"
CLUTTERED TRUSSES

EFFECT OF SPAN ON DAYLIGHTING DISTRIBUTION, USING SLOPING WINDOWS


40'
10'
80'
40' MONITOR
10' MONITOR

SPAN	40'	10'
MAX. F.C.	66	67
MIN. F.C.	41	[illegible]

GENERAL:
1. MAXIMUM USE MADE OF NATURAL LIGHTING.
2. INCANDESCENT LAMPS USED TO AUGMENT DAYLIGHT & SPOT PARTICULAR AREAS.

ILLUMINATION

THREE "COMMENDED" PROJECTS IN PLANT DESIGN

By Walter F. Bogner

Professor of Architecture, Harvard University

In this study the students were required to design a plant with two types of manufacturing space: one for manufacturing, storage, and assembly, 100,000 sq. ft. in area, in which no machine was over 14 ft. in height; the other for drop forging and heat treating, 30,000 sq. ft. of floor space, in which great height was demanded for forge hammers and an overhead crane. In the latter, noise and extreme heat from furnaces produced special problems. Offices, a display room, and such general plant requirements as boiler house, cafeteria and recreation facilities, personnel office, clinic, gate house, plant repair and maintenance shop, garage and truck service shop, were also required.

The students were given as objectives the following five requirements:

1. *A minimum of materials handling.* Good production flow, short lines of transportation, no back-tracking in aisles, strategic location of the areas allocated to raw material storage, processing, finished parts storage, assembly, finished goods storage, and shipping were demanded.

2. *Maximum flexibility.* The easy rearrangement of machine layout for anticipated changes in the products or in the production methods was considered essential.

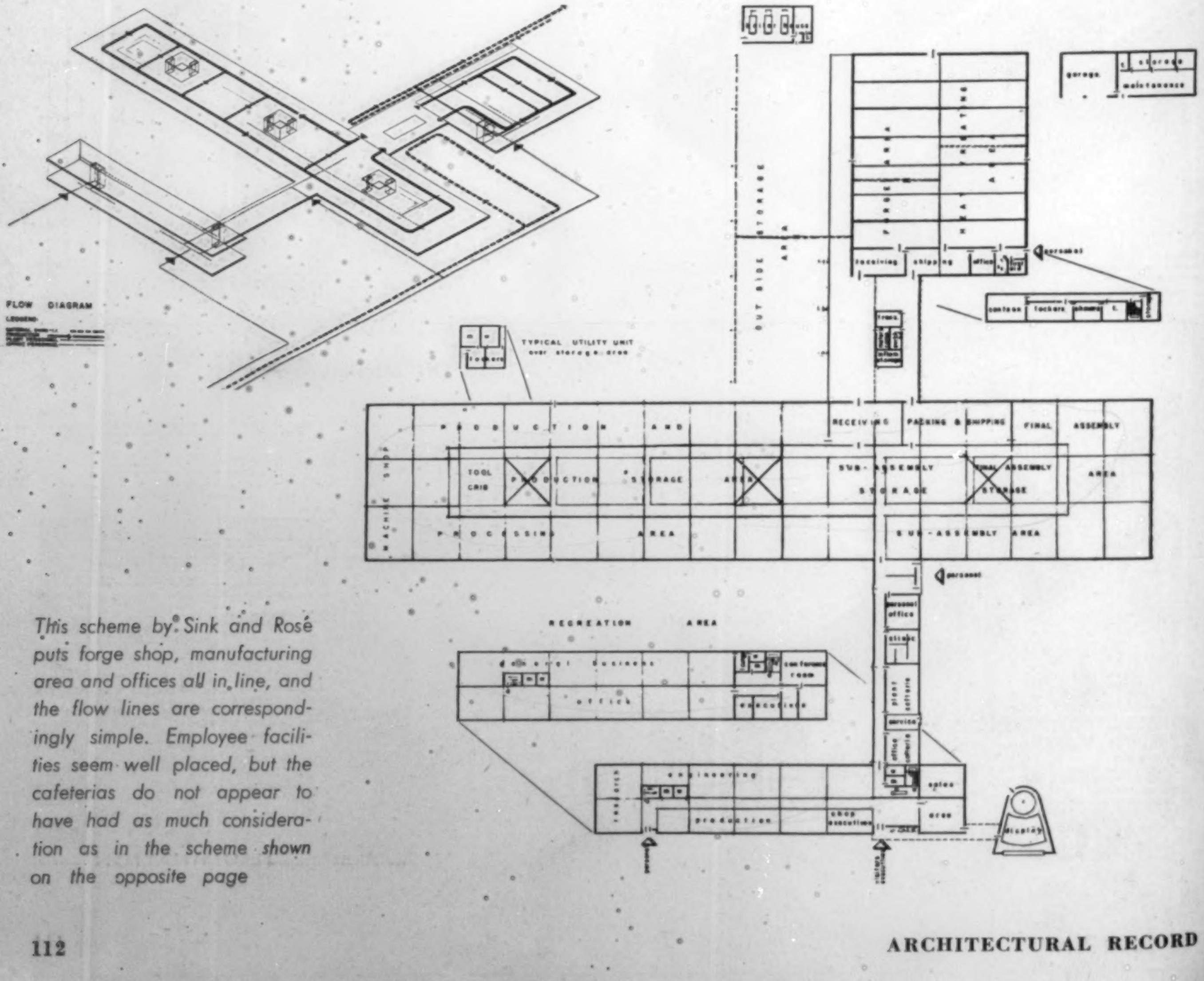
3. *Operation with a minimum of overhead personnel.* A combining of production areas and storage areas for supervision and control by a minimum number of employees was deemed advisable.

4. *Balanced expansion possibilities.* Provisions for the growth of each component part of the plant had to be provided in proper size.

5. *Minimum cost of rearrangement in connection with internal changes and external enlargement of the plant.* Hereunder provisions had to be made which permitted the moving of walls, windows, and partitions to new locations with a minimum of expense.

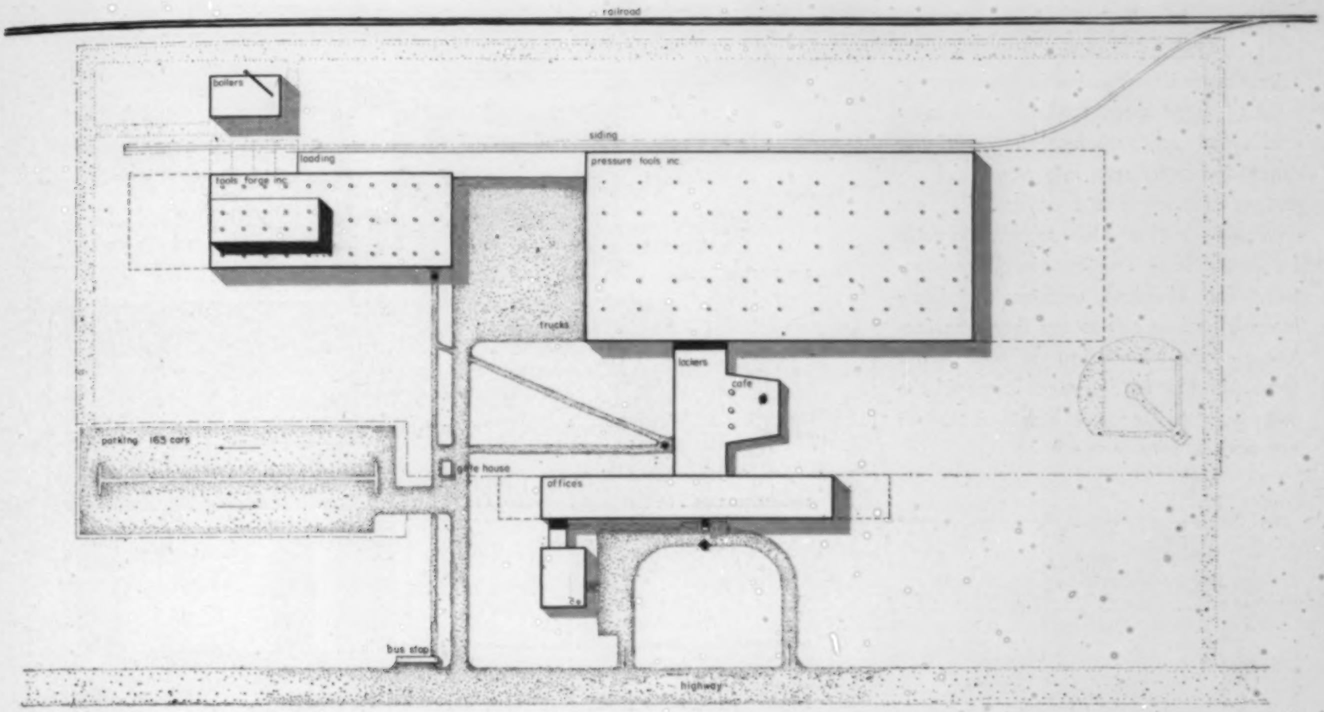
The students were organized in teams of two for the development of the industrial plant designs. Commendations of the jury were given to the three projects which were submitted by Stephenson and Underwood; Turano and Page; Sink and Rosé. All were students in architecture.

No. 1. BY STUDENTS SINK AND ROSÉ

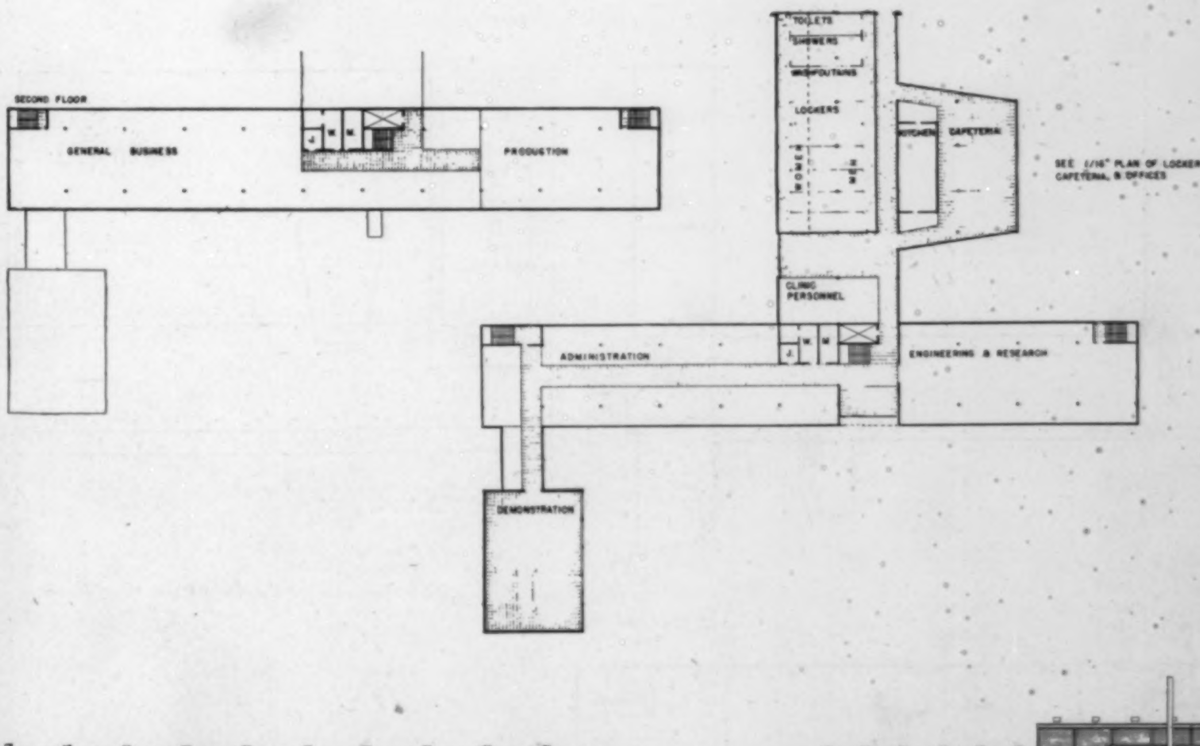

FLOW DIAGRAM
LEGEND
TYPICAL UTILITY UNIT over storage area
lockers
OUT SIDE STORAGE AREA
FORGE AREA
HEAT TREATING AREA
receiving
shipping
office
personnel
canteen
lockers
showers
garage
storage
maintenance
PRODUCTION AND PROCESSING AREA
MACHINE SHOP
TOOL CRIB
PRODUCTION STORAGE AREA
RECEIVING
PACKING & SHIPPING
FINAL ASSEMBLY AREA
SUB-ASSEMBLY STORAGE
FINAL ASSEMBLY STORAGE
SUB-ASSEMBLY AREA
personnel
personnel office
clinic
plant cafeteria
service
office cafeteria
RECREATION AREA
general business office
conference room
executives
research
engineering
production
shop executives
sales area
display
visitors

This scheme by Sink and Rosé puts forge shop, manufacturing area and offices all in line, and the flow lines are correspondingly simple. Employee facilities seem well placed, but the cafeterias do not appear to have had as much consideration as in the scheme shown on the opposite page

No. 2. BY STUDENTS STEPHENSON AND UNDERWOOD

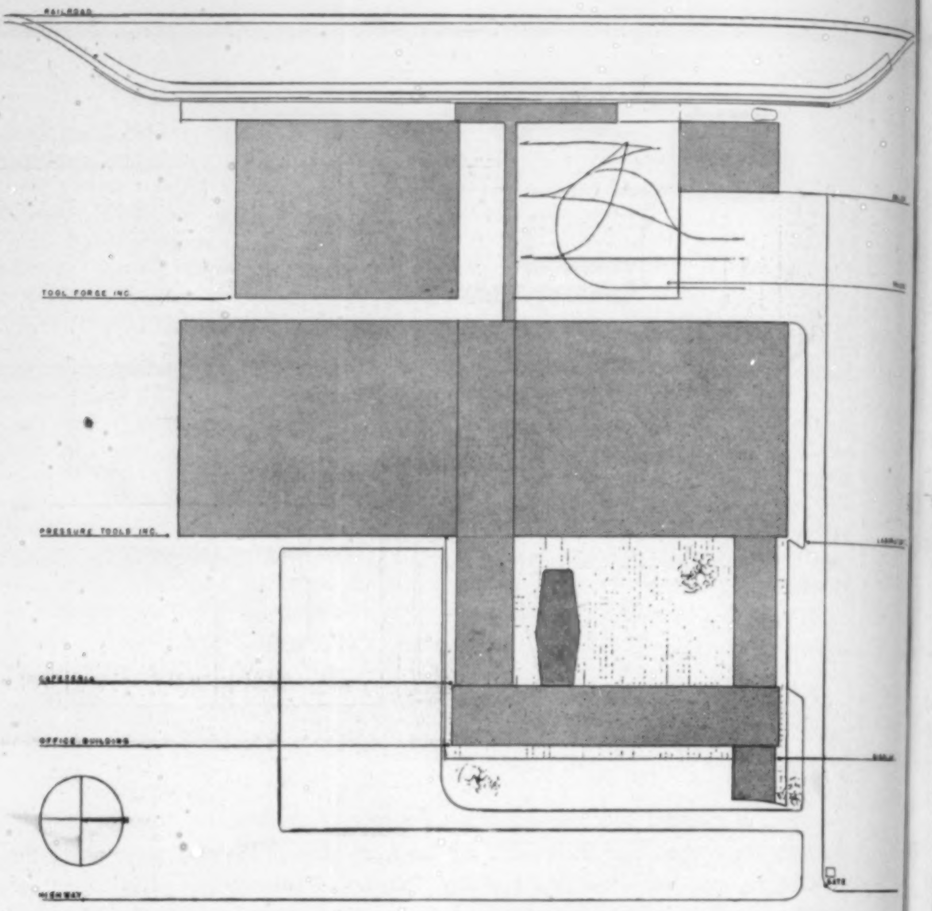

railroad
boilers
siding
loading
tools forge inc
pressure tools inc.
trucks
lockers
cafe
parking 165 cars
gate house
offices
bus stop
highway

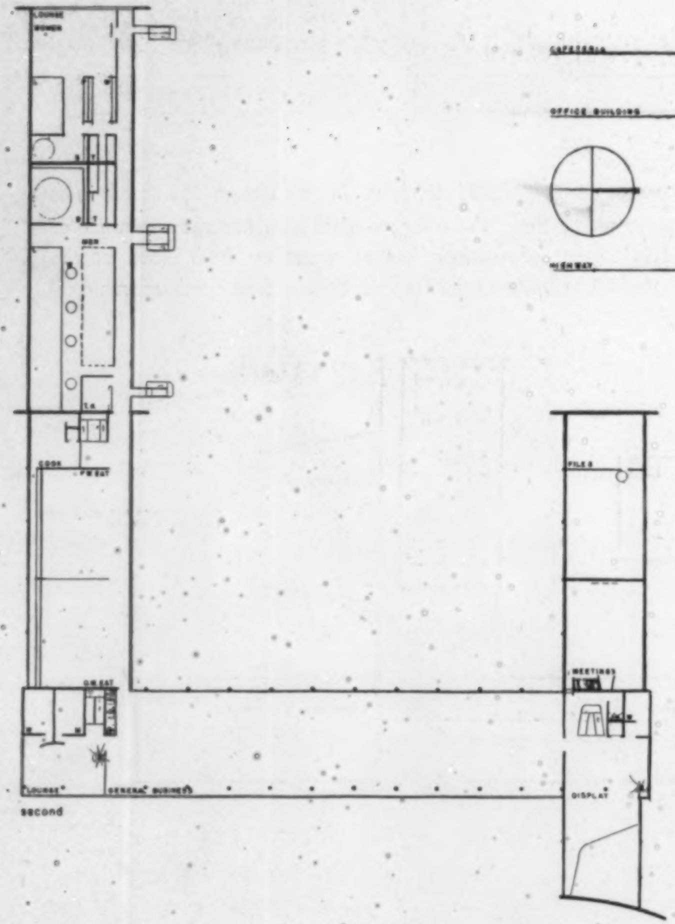
Assuming a railroad spur running along the rear of the site, Students Stephenson and Underwood put the forge shop at the side of the main manufacturing building. This would seem to provide excellent loading facilities for both incoming materials and outgoing finished products. In this design the cafeteria is given prominence, and a larger scale plan (not shown) indicates development of outdoor lounge areas on both sides of the cafeteria, a feature which no doubt would be much appreciated


SECOND FLOOR
GENERAL BUSINESS
J
W
M
PRODUCTION
TOILETS
SHOWERS
WASHFOUNTAINS
LOCKERS
WOMEN
MEN
KITCHEN
CAFETERIA
SEE 1/16" PLAN OF LOCKER ROOMS CAFETERIA, & OFFICES
CLINIC
PERSONNEL
ADMINISTRATION
ENGINEERING & RESEARCH
DEMONSTRATION

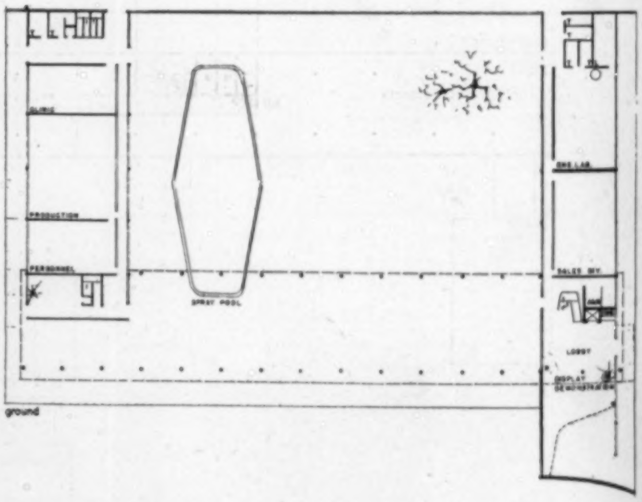
No. 3. BY STUDENTS TURANO AND PAGE

This scheme develops the in-line arrangement of forge shop, manufacturing area and office portion. Here, however, the office section is split into parts and arranged to enclose a courtyard complete with spray pool and the columned arcade frequently seen in Continental architecture. The divisions appear completely logical, and who is to say that manufacturing plant cannot just as well stand some freedom in design as some of the other building types in which such devices are more commonly seen?

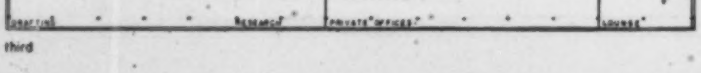

RAILROAD
TOOL FORGE INC.
PRESSURE TOOLS INC.
CAFETERIA
OFFICE BUILDING
HIGHWAY
GATE


LOUNGE WOMEN
MEN
COOK
FILES
MEETINGS
LOUNGE
GENERAL BUSINESS
DISPLAY

second


CLINIC
PRODUCTION
PERSONNEL
SPRAY POOL
ENG. LAB.
SALES DIV.
LOBBY
DISPLAY DEMONSTRATION

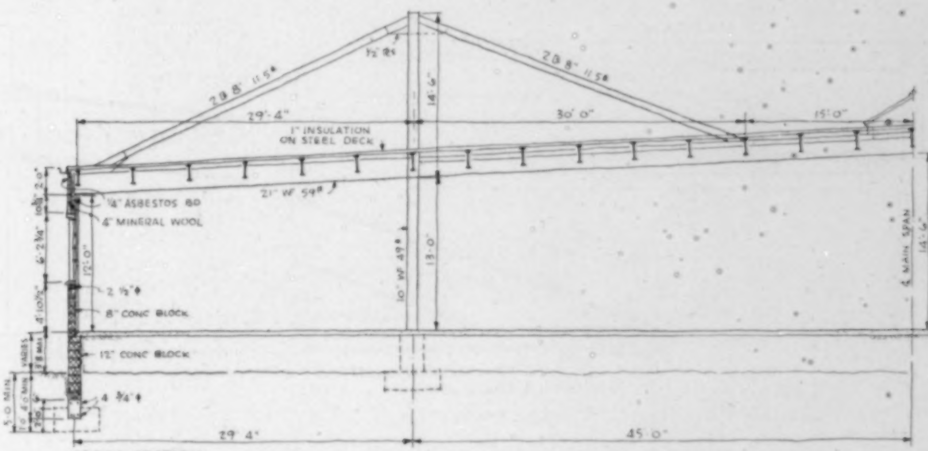
ground


TRAFFIC
MANUFACTURING
OFFICERS
CONF
PRES.
DRAFTING
RESEARCH
PRIVATE OFFICES
LOUNGE

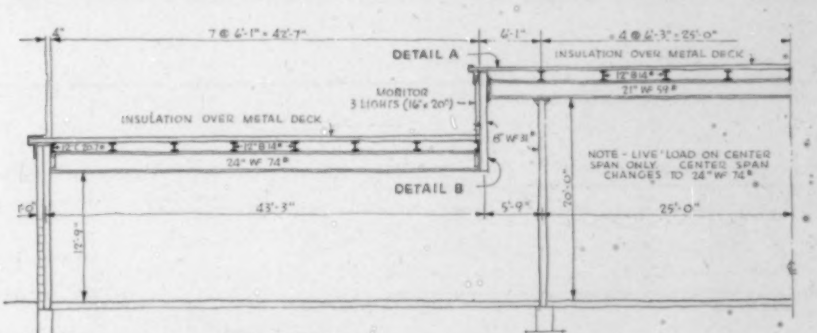
third

ECONOMICAL STEEL FRAMING DETAILS

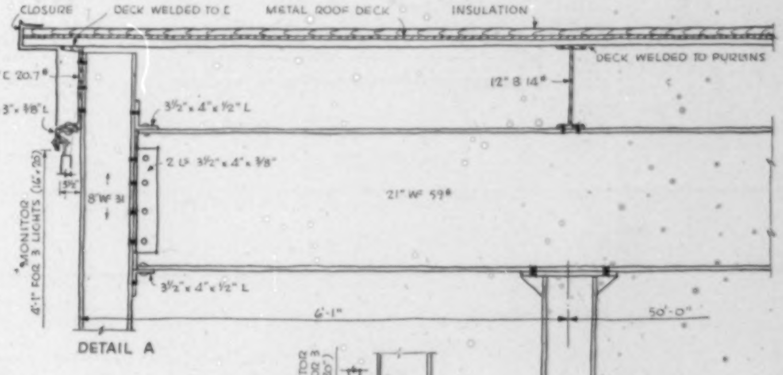
Suggestions of American Institute of Steel Construction for Small Industrial Buildings


29'-4"
30'-0"
15'-0"
14'-6"
1" INSULATION ON STEEL DECK
1/4" ASBESTOS BD
4" MINERAL WOOL
21" WF 59#
10" WF 49#
13'-0"
12'-0"
2 1/2"φ
8" CONC BLOCK
12" CONC BLOCK
4 3/4"φ
MAIN SPAN
14'-6"
29'-4"
45'-0"

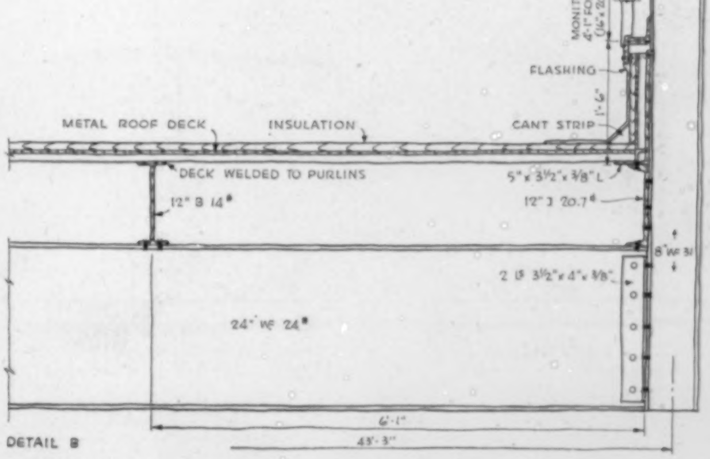
CROSS SECTION


4"
7 @ 6'-1" = 42'-7"
DETAIL A
6'-1"
4 @ 6'-3" = 25'-0"
INSULATION OVER METAL DECK
12" B 14#
21" WF 59#
MONITOR 3 LIGHTS (16' x 20')
INSULATION OVER METAL DECK
12" C 20.7#
12" B 14#
24" WF 74#
8" WF 31#
NOTE - LIVE LOAD ON CENTER SPAN ONLY. CENTER SPAN CHANGES TO 24" WF 74#
DETAIL B
1'-0"
43'-3"
5'-9"
20'-0"
25'-0"
12'-9"

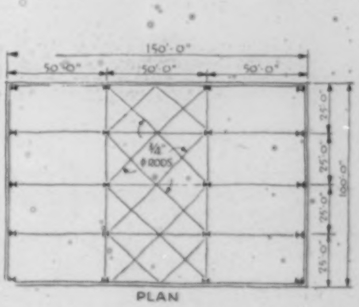
CROSS SECTION


CLOSURE
DECK WELDED TO C
METAL ROOF DECK
INSULATION
DECK WELDED TO PURLINS
12" C 20.7#
12" B 14#
3" x 3" x 3/8" L
3 1/2" x 4" x 1/2" L
2 Ls 3 1/2" x 4" x 3/8"
8" WF 31
21" WF 59#
MONITOR 6'-1" FOR 3 LIGHTS (16' x 20')
3 1/2" x 4" x 1/2" L
6'-1"
50'-0"
8" WF 31

DETAIL A


MONITOR 6'-1" FOR 3 (16' x 20')
FLASHING
METAL ROOF DECK
INSULATION
CANT STRIP
1'-6"
DECK WELDED TO PURLINS
5" x 3 1/2" x 3/8" L
12" B 14#
12" C 20.7#
8" WF 31
2 Ls 3 1/2" x 4" x 3/8"
24" WF 74#
6'-1"
43'-3"

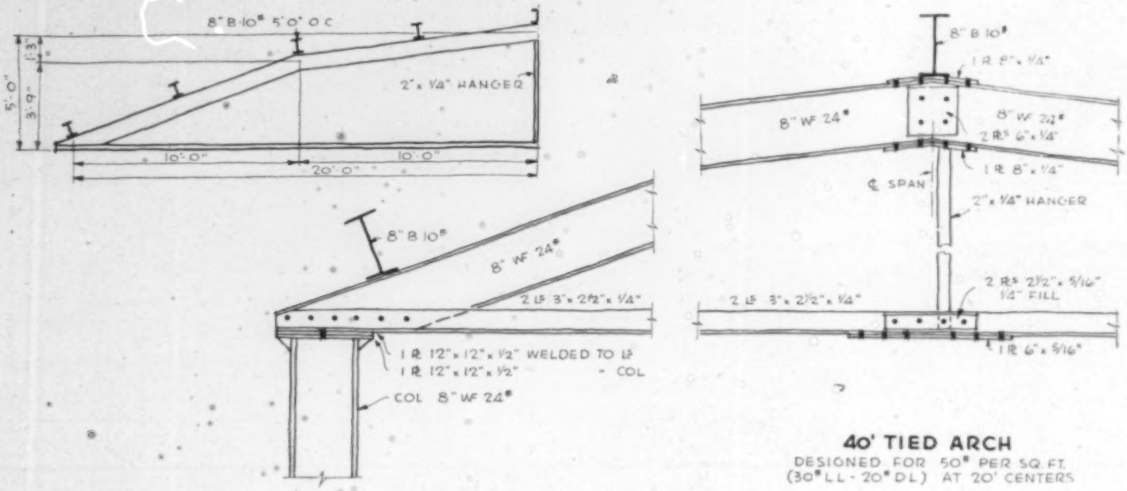
DETAIL B


150'-0"
50'-0"
50'-0"
50'-0"
3/4" φ RODS
25'-0"
25'-0"
25'-0"
25'-0"
100'-0"

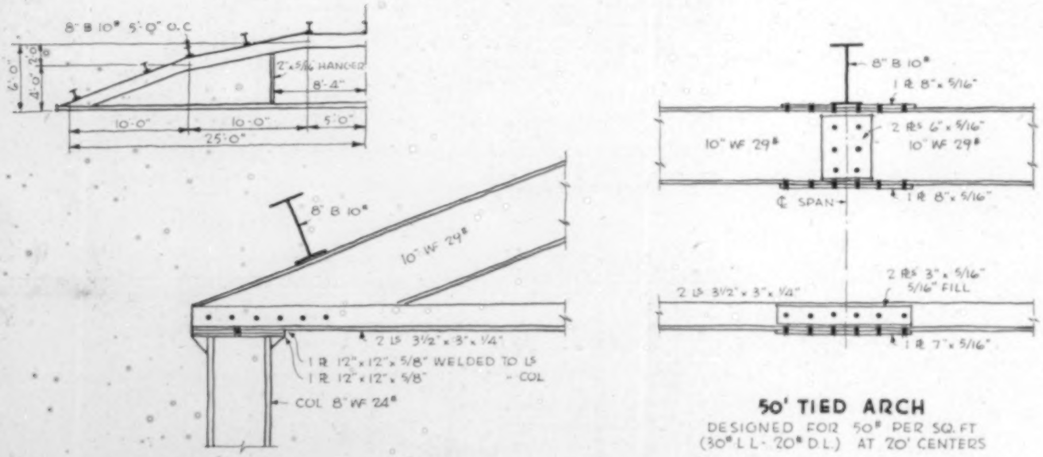
PLAN

ECONOMICAL STEEL FRAMING DETAILS (Continued from page 115; continued on page 119)

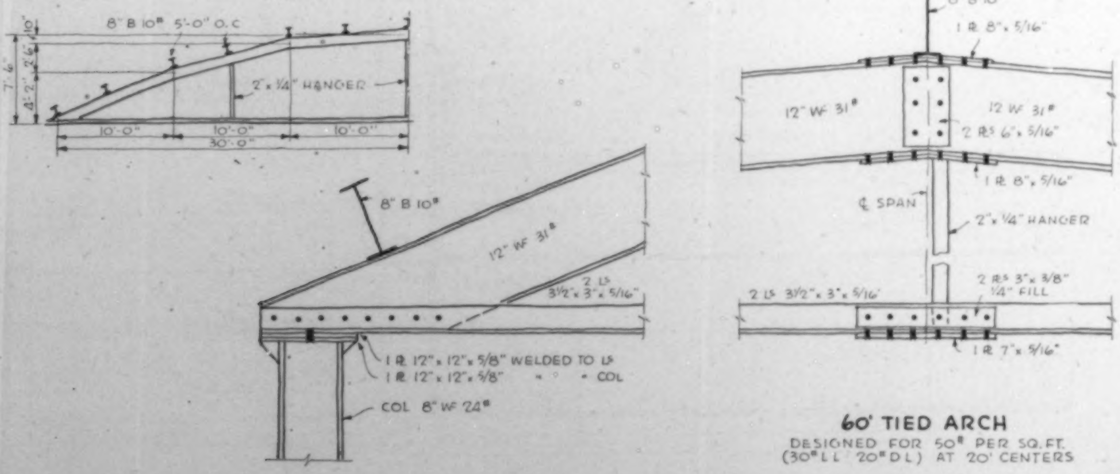
Suggestions of American Institute of Steel Construction for Small Industrial Buildings


8" B 10# 5'-0" O.C
5'-0"
1'-3"
3'-9"
2" x 1/4" HANGER
10'-0"
10'-0"
20'-0"
8" B 10#
8" WF 24#
2 Ls 3" x 2 1/2" x 1/4"
1 PL 12" x 12" x 1/2" WELDED TO Ls
1 PL 12" x 12" x 1/2" - COL
COL 8" WF 24#
8" B 10#
1 PL 8" x 1/4"
8" WF 24#
8" WF 24#
2 PLs 6" x 1/4"
1 PL 8" x 1/4"
℄ SPAN
2" x 1/4" HANGER
2 Ls 3" x 2 1/2" x 1/4"
2 PLs 2 1/2" x 5/16"
1/4" FILL
1 PL 6" x 5/16"

40' TIED ARCH
DESIGNED FOR 50# PER SQ. FT.
(30# L.L. - 20# D.L.) AT 20' CENTERS


8" B 10# 5'-0" O.C
6'-0"
4'-0"
2'-0"
2" x 5/16" HANGER
8'-4"
10'-0"
10'-0"
5'-0"
25'-0"
8" B 10#
10" WF 29#
2 Ls 3 1/2" x 3" x 1/4"
1 PL 12" x 12" x 5/8" WELDED TO Ls
1 PL 12" x 12" x 5/8" - COL
COL 8" WF 24#
8" B 10#
1 PL 8" x 5/16"
10" WF 29#
2 PLs 6" x 5/16"
10" WF 29#
1 PL 8" x 5/16"
℄ SPAN
2 Ls 3 1/2" x 3" x 1/4"
2 PLs 3" x 5/16"
5/16" FILL
1 PL 7" x 5/16"

50' TIED ARCH
DESIGNED FOR 50# PER SQ. FT.
(30# L.L. - 20# D.L.) AT 20' CENTERS

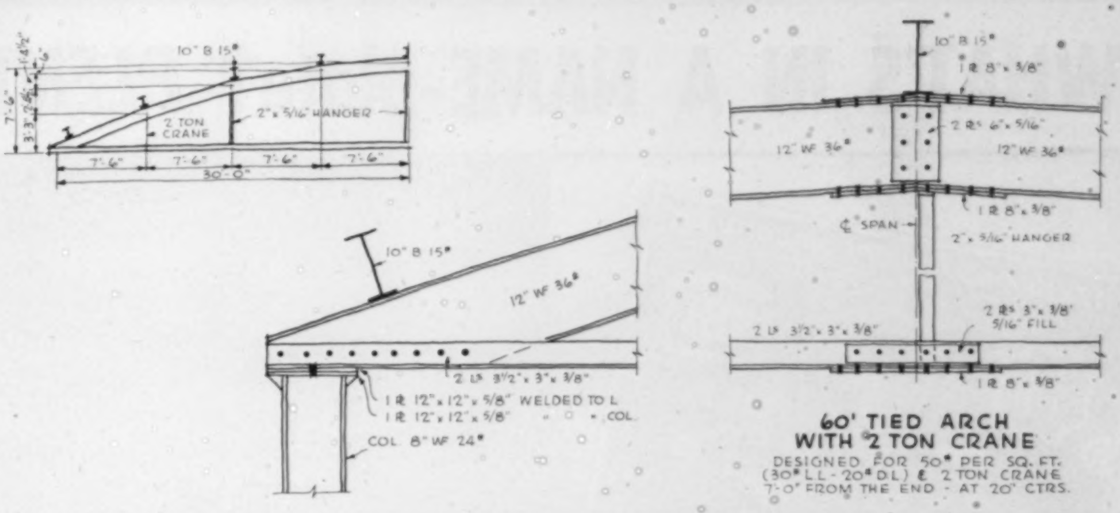

8" B 10# 5'-0" O.C
7'-6"
4'-2"
2'-6"
10"
2" x 1/4" HANGER
10'-0"
10'-0"
10'-0"
30'-0"
8" B 10#
12" WF 31#
2 Ls 3 1/2" x 3" x 5/16"
1 PL 12" x 12" x 5/8" WELDED TO Ls
1 PL 12" x 12" x 5/8" - COL
COL 8" WF 24#
8" B 10#
1 PL 8" x 5/16"
12" WF 31#
12 WF 31#
2 PLs 6" x 5/16"
1 PL 8" x 5/16"
℄ SPAN
2" x 1/4" HANGER
2 Ls 3 1/2" x 3" x 5/16"
2 PLs 3" x 3/8"
1/4" FILL
1 PL 7" x 5/16"

60' TIED ARCH
DESIGNED FOR 50# PER SQ. FT.
(30# L.L. - 20# D.L.) AT 20' CENTERS

ECONOMICAL STEEL FRAMING DETAILS

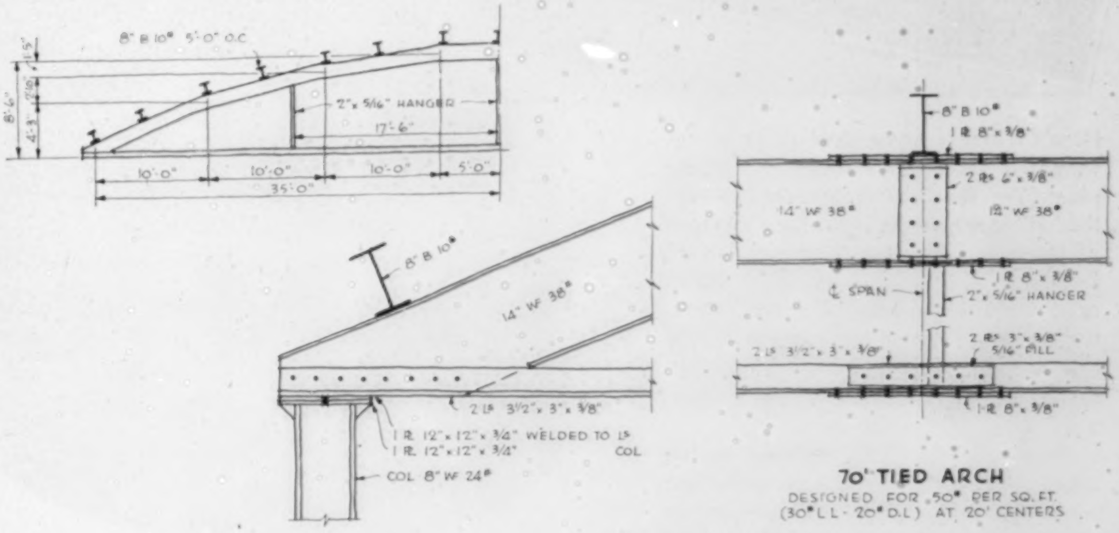
(Continued from page 116; continued on page 121)

Suggestions of American Institute of Steel Construction for Small Industrial Buildings


10" B 15#
1'-4½"
7'-6"
3'-3"
2'-6½"
2 TON CRANE
2" x 5/16" HANGER
7'-6"
7'-6"
7'-6"
7'-6"
30'-0"
10" B 15#
12" WF 36#
2 Ls 3½" x 3" x 3/8"
1 PL 12" x 12" x 5/8" WELDED TO L
1 PL 12" x 12" x 5/8" " " COL.
COL. 8" WF 24#
10" B 15#
1 PL 8" x 3/8"
2 PLs 6" x 5/16"
12" WF 36#
12" WF 36#
1 PL 8" x 3/8"
℄ SPAN
2" x 5/16" HANGER
2 PLs 3" x 3/8"
5/16" FILL
2 Ls 3½" x 3" x 3/8"
1 PL 8" x 3/8"

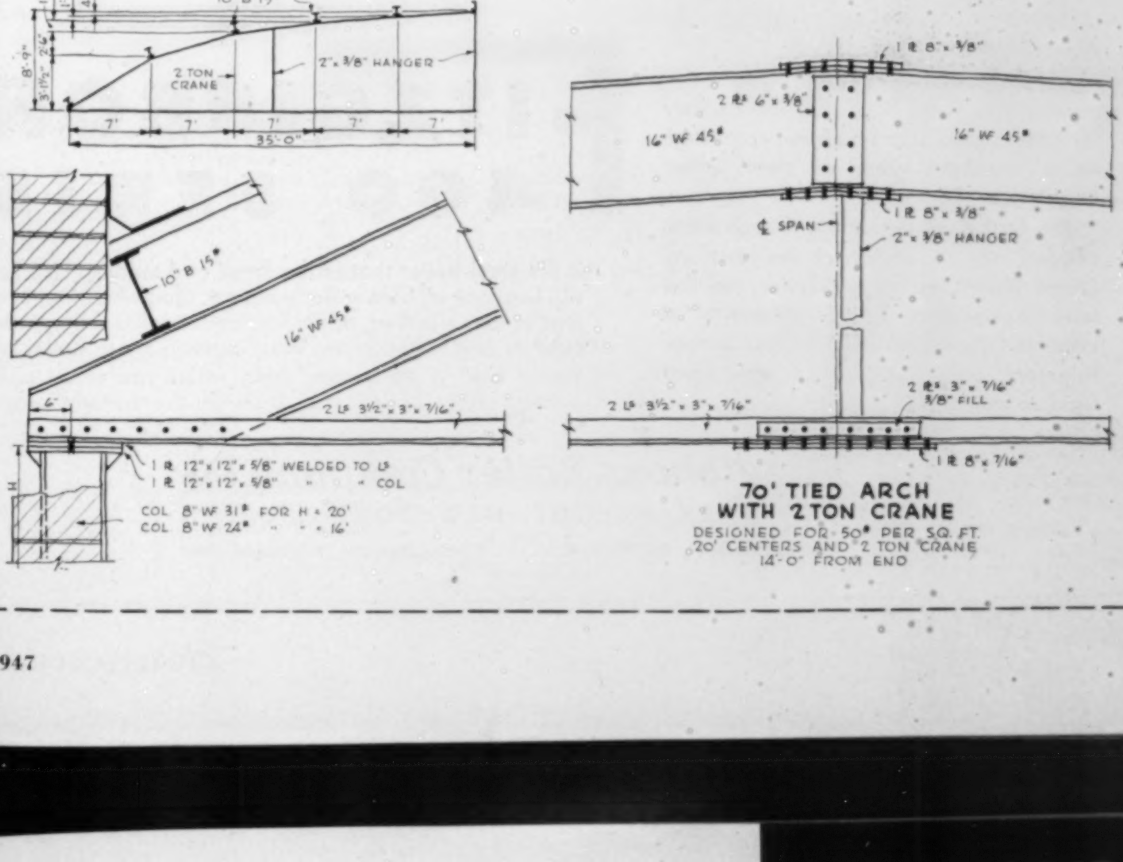
60' TIED ARCH WITH 2 TON CRANE

DESIGNED FOR 50# PER SQ. FT. (30# L.L - 20# D.L) & 2 TON CRANE 7'-0" FROM THE END - AT 20' CTRS.


8" B 10# 5'-0" O.C.
1'-5"
8'-6"
4'-3"
2'-10"
2" x 5/16" HANGER
17'-6"
10'-0"
10'-0"
10'-0"
5'-0"
35'-0"
8" B 10#
14" WF 38#
2 Ls 3½" x 3" x 3/8"
1 PL 12" x 12" x 3/4" WELDED TO Ls
1 PL 12" x 12" x 3/4" COL
COL 8" WF 24#
8" B 10#
1 PL 8" x 3/8"
2 PLs 6" x 3/8"
14" WF 38#
14" WF 38#
1 PL 8" x 3/8"
℄ SPAN
2" x 5/16" HANGER
2 PLs 3" x 3/8"
5/16" FILL
2 Ls 3½" x 3" x 3/8"
1 PL 8" x 3/8"

70' TIED ARCH

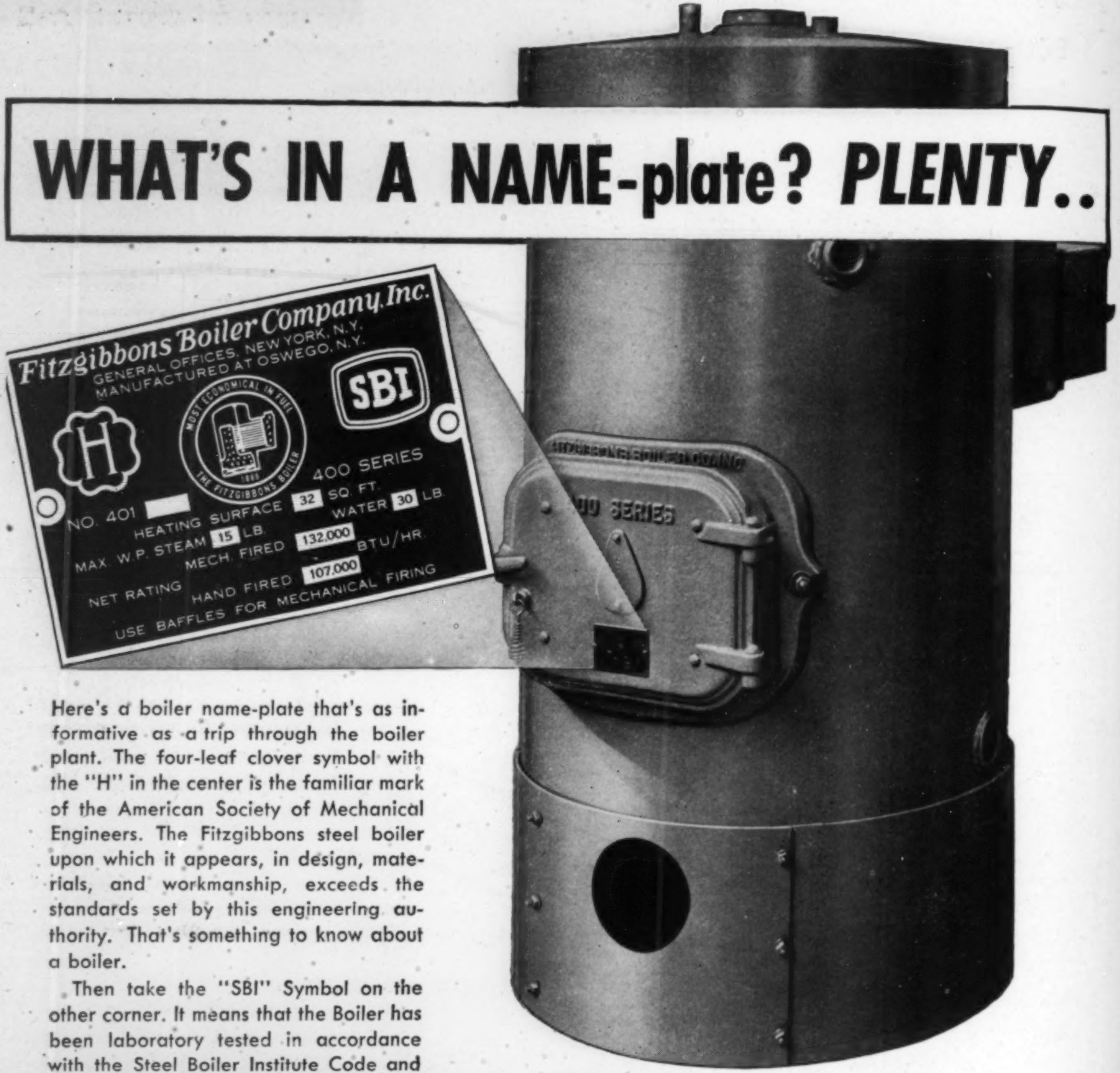
DESIGNED FOR 50# PER SQ. FT. (30# L.L - 20# D.L) AT 20' CENTERS


10" B 15#
1'-9"
1'-0"
4½"
8'-9"
2'-6"
3'-1½"
2 TON CRANE
2" x 3/8" HANGER
7'
7'
7'
7'
7'
35'-0"
10" B 15#
16" WF 45#
6"
2 Ls 3½" x 3" x 7/16"
1 PL 12" x 12" x 5/8" WELDED TO Ls
1 PL 12" x 12" x 5/8" " " COL
H
COL 8" WF 31# FOR H = 20'
COL 8" WF 24# " " = 16'
1 PL 8" x 3/8"
2 PLs 6" x 3/8"
16" WF 45#
16" WF 45#
1 PL 8" x 3/8"
℄ SPAN
2" x 3/8" HANGER
2 PLs 3" x 7/16"
3/8" FILL
2 Ls 3½" x 3" x 7/16"
1 PL 8" x 7/16"

70' TIED ARCH WITH 2 TON CRANE

DESIGNED FOR 50# PER SQ. FT. 20' CENTERS AND 2 TON CRANE 14'-0" FROM END

WHAT'S IN A NAME-plate? *PLENTY..*


Fitzgibbons Boiler Company, Inc.
GENERAL OFFICES, NEW YORK, N.Y.
MANUFACTURED AT OSWEGO, N.Y.
SBI
H
MOST ECONOMICAL IN FUEL
1886
THE FITZGIBBONS BOILER
400 SERIES
NO. 401
HEATING SURFACE 32 SQ. FT.
MAX. W.P. STEAM 15 LB. WATER 30 LB.
MECH. FIRED 132,000
NET RATING BTU/HR.
HAND FIRED 107,000
USE BAFFLES FOR MECHANICAL FIRING
FITZGIBBONS BOILER CO. INC.
400 SERIES

This is the bare boiler without trim or insulation. The quickly attached jacket, now available, covers and protects everything including burner and all controls.

Here's a boiler name-plate that's as informative as a trip through the boiler plant. The four-leaf clover symbol with the "H" in the center is the familiar mark of the American Society of Mechanical Engineers. The Fitzgibbons steel boiler upon which it appears, in design, materials, and workmanship, exceeds the standards set by this engineering authority. That's something to know about a boiler.

Then take the "SBI" Symbol on the other corner. It means that the Boiler has been laboratory tested in accordance with the Steel Boiler Institute Code and its rating proven accurate. It eliminates wishful thinking, disappointment, and dissatisfaction in boiler performance. You know what that boiler will do.

The third symbol is the Fitzgibbons trade mark, (Reg. U. S. Pat. Off.) which for over sixty years has been regarded as a top-flight mark of steel boiler excellence.

For further confirmation, if such were needed, see the stamp of the Hartford Steam Boiler Insurance Service, on the tube extension. Their representative inspects Fitzgibbons steel boilers before shipment, and "OK's" them only after rigid examination.

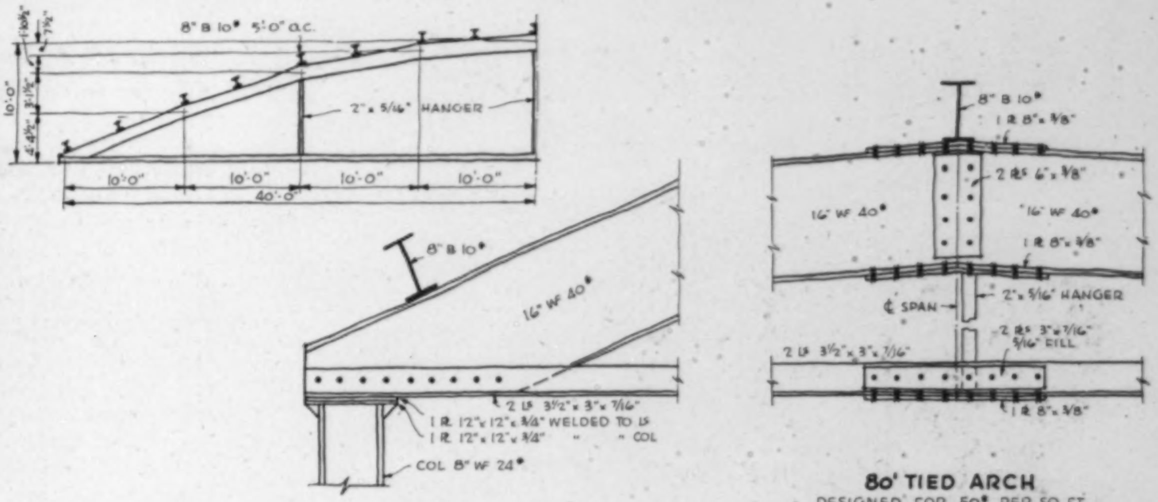
FITZGIBBONS
400 SERIES

is the steel boiler that in the small and medium size home will help any oil burner do its utmost. Quick-heating, enduring, quickly installed, easily serviced, it is ideal for replacement or new installations. From name plate to boiler plate you're betting on a sure thing when you select a Fitzgibbons steel boiler. Full data in the bulletin — write.

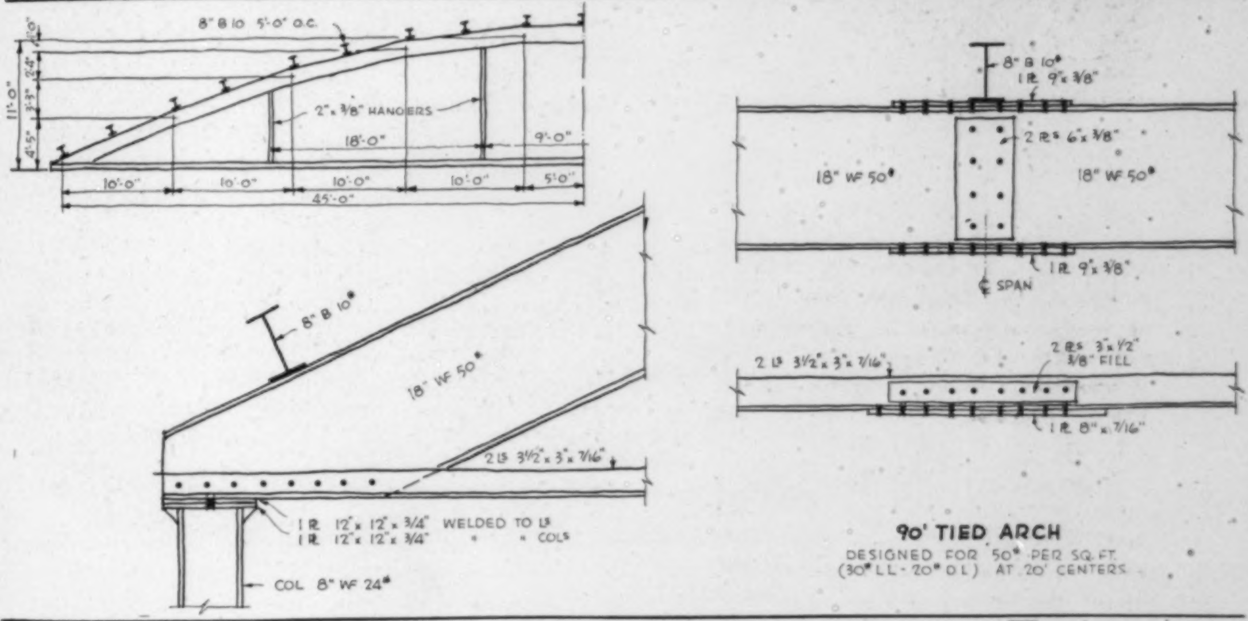
Fitzgibbons Boiler Company, Inc.
101 PARK AVENUE, NEW YORK 17, N. Y.
Manufactured at: **OSWEGO, N. Y.** *Sales Branches in Principal Cities*

ECONOMICAL STEEL FRAMING DETAILS *(Continued from page 119)*

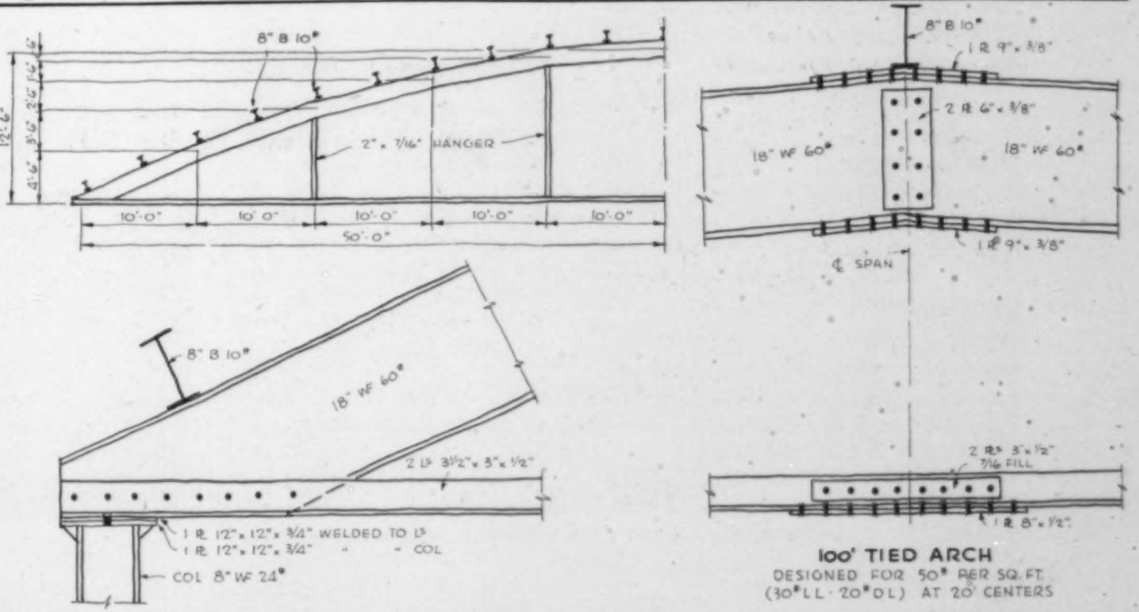
Suggestions of American Institute of Steel Construction for Small Industrial Buildings


8" B 10# 5'-0" O.C.
1'-10¾"
7½"
10'-0"
3'-1½"
4'-4½"
2" x 5/16" HANGER
10'-0"
10'-0"
10'-0"
10'-0"
40'-0"
8" B 10#
16" WF 40#
2 Ls 3½" x 3" x 7/16"
1 PL 12" x 12" x ¾" WELDED TO Ls
1 PL 12" x 12" x ¾" " " COL
COL 8" WF 24#
8" B 10#
1 PL 8" x ⅜"
2 PLs 6" x ⅜"
16" WF 40#
16" WF 40#
1 PL 8" x ⅜"
2" x 5/16" HANGER
℄ SPAN
2 PLs 3" x 7/16"
5/16" FILL
2 Ls 3½" x 3" x 7/16"
1 PL 8" x ⅜"

80' TIED ARCH
DESIGNED FOR 50# PER SQ. FT.
(30# LL - 20# DL) AT 20' CENTERS


8" B 10 5'-0" O.C.
1'-0"
2'-4"
11'-0"
3'-3"
4'-5"
2" x ⅜" HANGERS
18'-0"
9'-0"
10'-0"
10'-0"
10'-0"
10'-0"
5'-0"
45'-0"
8" B 10#
18" WF 50#
2 Ls 3½" x 3" x 7/16"
1 PL 12" x 12" x ¾" WELDED TO Ls
1 PL 12" x 12" x ¾" " " COLS
COL 8" WF 24#
8" B 10#
1 PL 9" x ⅜"
2 PLs 6" x ⅜"
18" WF 50#
18" WF 50#
1 PL 9" x ⅜"
℄ SPAN
2 Ls 3½" x 3" x 7/16"
2 PLs 3" x ½"
⅜" FILL
1 PL 8" x 7/16"

90' TIED ARCH
DESIGNED FOR 50# PER SQ. FT.
(30# LL - 20# DL) AT 20' CENTERS

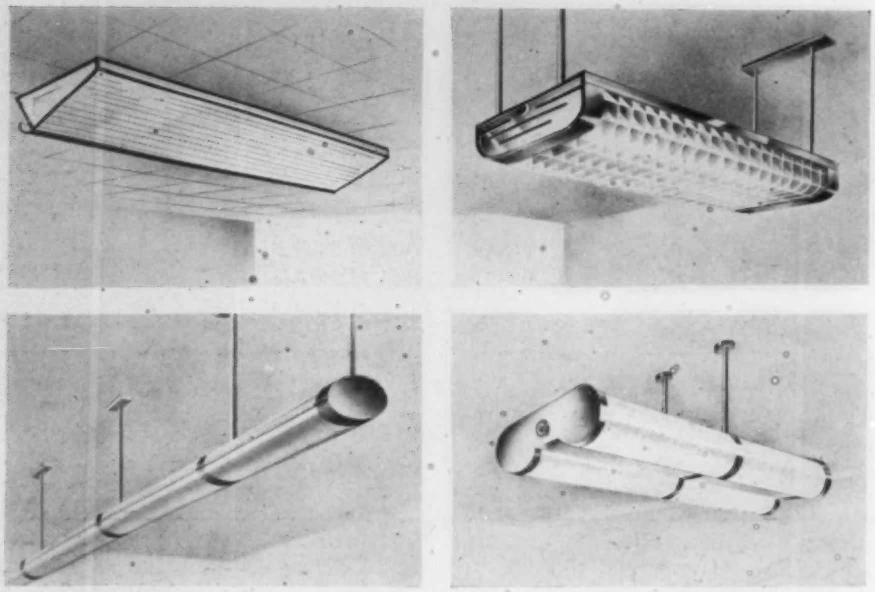

8" B 10#
6"
1'-6"
2'-6"
12'-6"
3'-6"
4'-6"
2" x 7/16" HANGER
10'-0"
10'-0"
10'-0"
10'-0"
10'-0"
50'-0"
8" B 10#
18" WF 60#
2 Ls 3½" x 3" x ½"
1 PL 12" x 12" x ¾" WELDED TO Ls
1 PL 12" x 12" x ¾" " " COL
COL 8" WF 24#
8" B 10#
1 PL 9" x ⅜"
2 PL 6" x ⅜"
18" WF 60#
18" WF 60#
1 PL 9" x ⅜"
℄ SPAN
2 PLs 3" x ½"
7/16 FILL
1 PL 8" x ½"

100' TIED ARCH
DESIGNED FOR 50# PER SQ. FT.
(30# LL - 20# DL) AT 20' CENTERS

ARCHITECTURAL ENGINEERING

TECHNICAL NEWS AND RESEARCH

PRODUCTS for Better Building



Shadowless, glareless lighting featured in prize-winning designs for schoolroom fixtures

SCHOOLROOM LIGHTING

Prize-winning schoolroom fixture designs in Sylvania Electric's Third Annual Fluorescent Fixture Design Competition have been announced. First prize was won by Lynn L. Sweetland, Jr., for a fixture (top left) that distributes light directionally toward the front of the schoolroom, so that, with proper lighting layout, brightness contrast between fixture and ceiling is minimized. Second prize was won by Gerald E. Parks for a fully-louvered fixture (top right) in which side louvers are set at an angle to eliminate glare. Third prize went to Robert M. Francis for his design (bottom left) in which wiring and ballast housing are placed at the center, to distribute light evenly around the fixture and eliminate shadows on the ceiling. Warren W. Weiss won fourth prize for his design (bottom right) which features a rotating shield on either side for directed blackboard lighting or normal classroom lighting. Sylvania Electric Products, Inc., 500 Fifth Ave., New York, N. Y.

DISPLAY LIGHTING

Several new types of lighting units have been especially designed for downlighting in stores and display rooms. They employ spotlamps and floodlamps and are installed flush with the ceiling so that the light comes from an inconspicuous source. Baffles are provided to eliminate glare, but at the same time permit enough luminosity to avoid brightness contrasts between ceiling and lighting unit. Three general types are available: a baffle downlight for general lighting; a directional downlight for accent lighting; and a counter downlight for projecting a long, narrow line of light on counter tops. Century Lighting, Inc., 419 W. 55th St., New York 19, N. Y.

AIR CLEANER

Electrostatic precipitation is used by the *Trion electric air filter* to remove dirt, dust, smoke, and pollen from air supplied to domestic warm-air heating or air conditioning systems. Particles of dust and dirt in the air are electrically charged as they pass through an ionizing screen and adhere to collecting plates of opposite polarity. The unit consists of a metal cabinet, 50¾ in. high, containing a screen of fine wires (ionizing screen), a series of 59 parallel aluminum plates (collecting chamber), a power pack for supplying high voltage direct current, and a jet spray system for flushing collected dirt from the plates — required about once a month. At present two sizes are being manufactured; Model 100 with a 1200 cfm rating, for houses up to seven rooms; and Model 200, 1800 cfm, for houses up to 11 rooms. Trion, Inc., 1000 Island Ave., McKees Rocks, Penn.

FLOORING

Oaktred is a composition flooring material composed of kiln-dried oak flour, asbestos fibers, and chemical binder, which is mixed with water and poured in place to form a permanent flooring. Installation is by the mason. Setting time is four to six days, after which it is sanded and finished. Oaktred is said to have good insulating qualities and offer advantages of being resilient, seamless, and fireproof. Kompolite Building Materials, Inc., 111–115 Clay St., Greenpoint, Brooklyn 22, N. Y.

WALL COVERING

Fabron, the fabric-plastic-lacquer covering for walls and ceilings, has been classified by the Underwriters' Laboratories, Inc., as a negative factor in the spread of fire when applied to unpainted plaster, and a negligible cause of smoke development. Frederic Blank & Co., Inc., 230 Park Ave., New York, N. Y.

REDWOOD STAIN

A special stain for redwood clapboard and siding has been developed in cooperation with the California Redwood Association. Made with undiluted creosote oil, *California Redwood Stain* is said to increase resistance to decay, maintain color for years, or restore original color to old redwood. It may also be applied to other woods to give them a redwood appearance. Samuel Cabot, Inc., 101 Oliver Bldg., Boston, Mass.

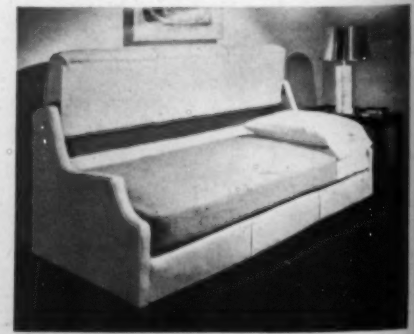
THERMOPANE CLIPS

A special type of non-corroding metal clip has been designed for use with double *Thermopane* units in standard punched steel sash. Basically, the clips are for units with two lights of ⅛-in. thickness and ¼-in. air space, having overall standard thickness of $\frac{7}{16}$ to $\frac{9}{16}$ in.; and are adaptable to greater thickness when sash is specially punched. Libbey-Owens-Ford Glass Co., Nicholas Bldg., Toledo, Ohio.

HOTEL BEDROOMS

An interesting design trend in the furnishing of hotel bedrooms is away from conventionally styled beds and toward the use of several lounge beds that serve as sofas during the day. The sofa bed is designed with a back that swings up, leaving an enlarged sleeping space about the size of a twin bed. Behind the back is space for storing a

(*Continued on page 136*)



Couch, especially designed for hotel rooms, opens into comfortable bed

Custom Lighting Results

Pittsburgh Permaflector Fluorescent and Incandescent Units are going into more and more of America's outstanding stores, offices and buildings.

That is because these standard units produce custom lighting results— and offer the added advantages of high efficiency, easy installation and minimum maintenance.

Why not check this superior equipment before planning your next lighting installation?

A PERMAFLECTOR PORTRAIT
Max Azen Furs
Marks & Simboli, Reg. Architects
Raphael Electric Co., Elec. Contractors

USE **PITTSBURGH** PERMAFLECTOR LIGHTING EQUIPMENT

PITTSBURGH REFLECTOR COMPANY
OLIVER BUILDING · PITTSBURGH 22, PA.

MANUFACTURERS OF FLUORESCENT AND INCANDESCENT LIGHTING EQUIPMENT
DISTRIBUTED BY BETTER ELECTRICAL WHOLESALERS EVERYWHERE

Permaflector Lighting Engineers in All Principal Cities

MANUFACTURERS' LITERATURE

AIR CONDITIONING

Amcoil Self-Contained or Remote Air Conditioning Units. Descriptive booklet on two units — the Latenaire Conditioner for warm, humid climates, and the Sensaire Conditioner for warm, dry climates. Complete specifications and full description of each. Tabulated recommendations for selection of models for home, office, stores, restaurants, etc.; calculator chart. 12 pp., illus. Amcoil Air Conditioning, American Coils Co., 360–364 Thomas St., Newark 5, N. J.

BUILDING WIRE

U. S. Aluminum Building Wire Handbook. A new booklet stressing the advantages claimed for aluminum wire, particularly in cost and current availability. Uses for the wire, test results, properties, tables showing the relative weights of various size aluminum and copper conductors. Joining and soldering methods. Typical solderless connectors. Tables of current carrying capacities, manufacturing dimensions, characteristics. 32 pp., illus. United States Rubber Co., 1230 Avenue of the Americas, New York 20, N. Y.

CONCRETE FORMS

(1) Atlas Labor-Saving Speed Forms for Walls and Slabs; (2) Atlas Labor-Saving Speed Floor Forms. Description of steel form units erected by hand or in large panels handled by crane. Typical layouts for use, and photos of actual jobs. 4 pp. ea., illus. Irvington Form & Tank Corp., Irvington, N. Y.*

FLOORS

The Aristocrat of Floors. Humorous booklet describing the advantages of rubber floors in the home. Includes suggestions on how to get rubber flooring in either a new house or a remodeled one, and a list of eight manufacturers of rubber flooring. 28 pp., illus. The Rubber Manufacturers Assn., Inc., 444 Madison Ave., New York, N. Y.

GYPSUM PLASTER

Technical Information on Gypsum Plaster Base Coats and Finishes. Full technical and fire test data on a line of base coat and finishing plasters. Includes plastering specifications, description of each product in the line, suggested use. 16 pp., illus. United States Gypsum Co., 300 W. Adams St., Chicago 6, Ill.*

HEATING

American Blower Industrial Heaters. Catalog of industrial heaters, giving complete details of construction, installation information, etc., and including tables of steam heating capacities and steam conversion factors, dimensions tables, and a typical specification form for industrial heaters and accessories. Steam piping diagrams also included. 24 pp., illus. American Blower Corp., Detroit, Mich.*

Plan for Perfect Heating in Your Present Home — in Your New Home. A booklet about home heating with all-electric heaters and furnaces. Home plans and photos illustrate built-in wall heaters, operating independently, in various types of house; portable heaters for occasional spot heating; and warm-air furnaces for central heating. 24 pp., illus. Electromode Corp., 45 Crouch St., Rochester 3, N. Y. *10 cents.*

KITCHENS

Youngstown Kitchens by Mullins. Folder especially designed for architects, giving construction specifications and dimensional details of Youngstown kitchen units, and 12 possible kitchen arrangements. Equipment includes the Kitchenaider cabinet sink, and wall and base cabinets, all of steel. 6 pp., illus. Mullins Mfg. Corp., Warren, Ohio.*

LANDSCAPING

Industry Need Not be Ugly. Booklet of photos showing successful landscaping of industrial plant grounds, with comments by plant executives on benefits to be derived from careful landscaping. 12 pp., illus. National Landscape Nurserymen's Assn., Box 313, Niles, Mich.

LIGHTING

The "General" Idea is Simple. Catalog of lighting fixtures for display windows and store interiors, including accent lights, goosenecks, fixed ceiling and wall mounts, special fixtures for high-ceilinged rooms, gooseneck desk and table lamps, recessed fluorescents, showcase strips, etc. 16 pp., illus. General Lighting Co., 32 Union Sq., New York 3, N. Y.

MARBLE

Marble Forecast: Availability of Foreign and Domestic Marbles. Second annual forecast of marbles available and in production. Lists each company's offerings, with notes as to quantities available. Gives complete list of members of Marble Institute of America and a list of importers of foreign marbles. Classifies marbles by color, and describes the four classifications adopted by the Institute for standardization purposes. 8 pp., illus. Marble Institute of America, 108 Forster Ave., Mt. Vernon, N. Y.

MERCHANDISING

Methods of Merchandising Presentation. Manual of merchandise display arrangements and fixtures, methods of figuring hardware and glass requirements, class cutting instructions, utilization of space above the counters, merchandising requirements of special departments. Includes catalog of a line of standards and brackets, bins and other equipment. 46 pp., illus. Reflector-Hardware Corp., Western Ave. at 22nd Pl., Chicago 8, Ill.

PLASTICS

Textolite Laminated Plastics. New bulletin giving the complete story of G-E Textolite laminated plastics; more than 50 grades described, each with its own special combination of properties. Forms in which Textolite plastics are supplied. Suggested applications. 64 pp., illus. Plastics Division, General Electric Co., 1 Plastics Ave., Pittsfield, Mass.*

ROOF TRUSS

A Welded Bow String Roof Truss. Article describing the structural framework for a 72-ft. clear span roof supported on masonry walls featuring arc welded bowstring roof trusses used in combination with an insulated steel deck. Technical details, diagrams. 4 pp., illus. The Lincoln Electric Co., Cleveland 1, Ohio.

STOKERS

Types LR and LR1 Ram-Feed Stokers (Bulletin S-32). Bulletin on two types of stokers with capacities of 75 to 315 boiler h.p., featuring automatic air volume control and intermittent coal feed control. Cross-sections, construction information, advantages claimed. 8 pp., illus. The Brownell Co., Dayton 1, Ohio.

TRACING CLOTH

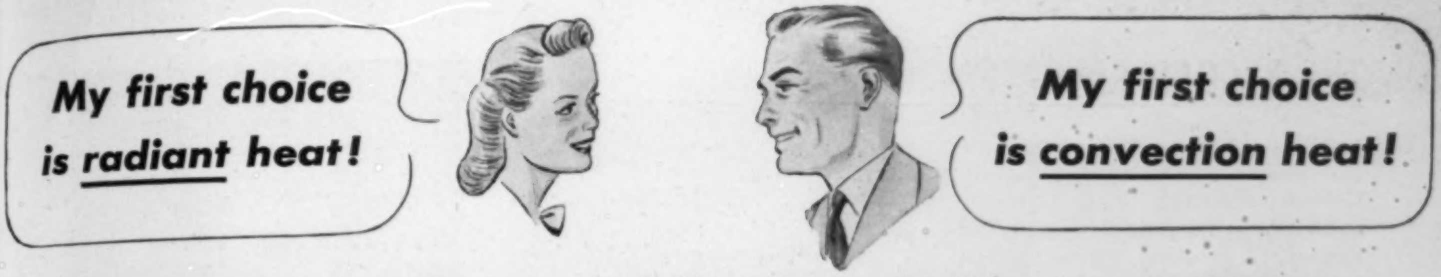
Arkwright Tracing Cloth for Ink or Pencil Drawings. Samples and specifications of four types of tracing cloth for ink or pencil drawings. Samples adequate for testing and comparison. Arkwright Finishing Co., Providence, R. I.

WALL TREATMENT

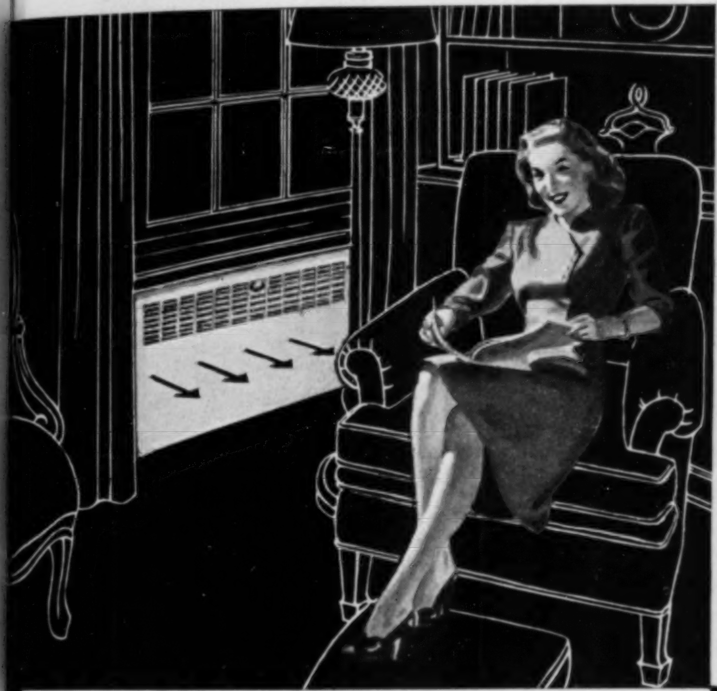
Hydroclide Colorless. Folder on an invisible water-repellent treatment for exterior concrete and masonry building walls above grade. Includes test data, advantages claimed, method of application. 4 pp., illus. Building Products Division, L. Sonneborn Sons, Inc., 88 Lexington Ave., New York 16, N. Y.*

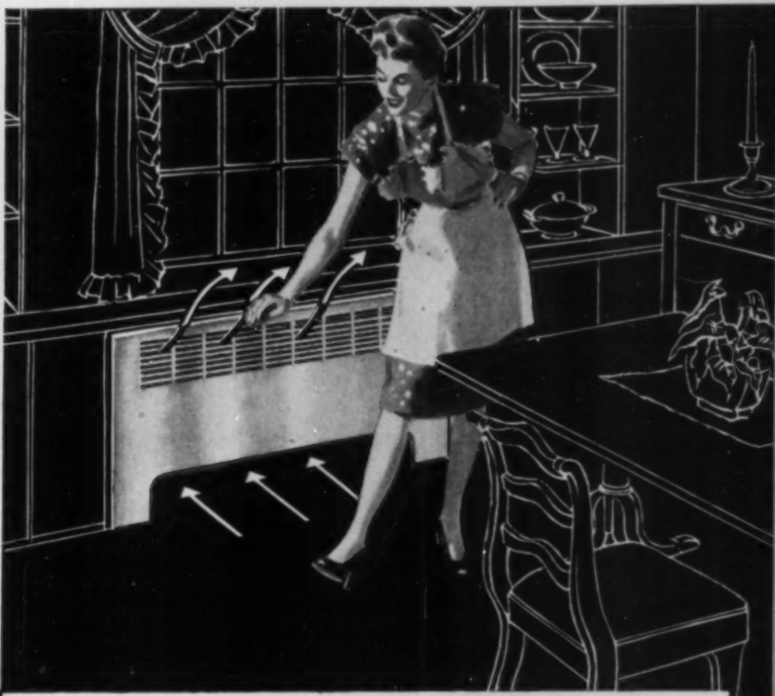
(*Continued on page 150*)

** Other product information in Sweet's File, 1947.*


My first choice is radiant heat!
My first choice is convection heat!

Modine Convector Radiation gives you these two heating principles blended into one!





1 RADIANT HEATING

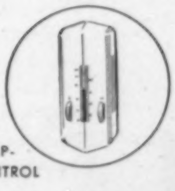
Mild, radiant heat in just enough quantity to offset heat loss from window areas — that's what those arrows represent, coming from the Modine Convector Panel below the window. To this we add . . .

2 CONVECTION HEATING

Warmed air circulated by Convection Heating. Hot water or steam passes through copper heating unit which draws cooler, floor-line air into bottom of convector where it's warmed, rises and then passes out through grille.

Result: Dependable new heating comfort for moderate cost homes and apartments . . . distinctive room charm and cleanliness without unsightly radiators! Yes, Modine Convector Radiation provides a modern, blended heating system for modern living — a heating system that makes possible individual room control — that responds almost instantly to sensitive automatic controls — that gives you gentle air circulation without the use of moving parts that wear out. If you're planning to build or modernize, think of Modine Convector Radiation . . . look for Modine's representative in the "Where-to-Buy-it" section of your phone book . . . or send in coupon below for new, free Convector Booklet! MODINE MANUFACTURING CO., 1773 Racine Street, Racine, Wisconsin.

MODERN BEAUTY



CLOSE TEMPERATURE CONTROL

EASY TO INSTALL

ADDS TO LIVING SPACE

PRICED FOR TODAY'S HOMES AND APARTMENTS

Modine

CONVECTOR RADIATION

The Modern "proved by use" heating method

Modine Mfg. Co., 1773 Racine St., Racine, Wis.

Yes! I want your new free booklet containing comp
facts on Convector Radiation. Please send it tod

NAME

ADDRESS

CITY

STATE

THE RECORD REPORTS

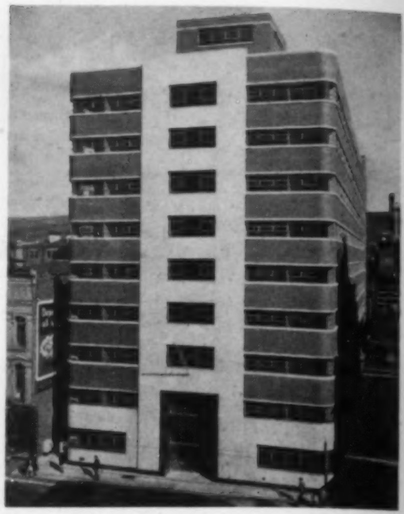
(Continued from page 18)

building; the Army Medical Museum and Center Administration building; Central Laboratory Group buildings; and the Army Institute of Medicine and Surgery. A working library, animal farm, quarters for the staff and other buildings also are included in the plans.

VA Regional Office

A 10-story regional office building recently completed for the Veterans Administration in Wilkes-Barre, Penn., required only nine months to build. Lacy, Atherton, Wilson & Davis of Wilkes-Barre were the Architects and Engineers.

The building was especially designed to meet VA needs. Private offices are provided by removable metal partitions, and the entire area in back of the elevators is left undivided on each floor. Of reinforced concrete construction, the building cost approximately $1,120,000, contains approximately 1,850,000 cu. ft.



VA Regional Office Building, Wilkes-Barre

The exterior is faced with common red brick, trimmed with Indiana limestone. Windows are steel, projected type. Main entrance trim and base are verde antique polished marble; main doors are all glass, with metal trim.

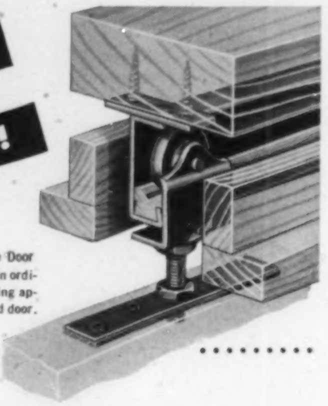
Housing Projects

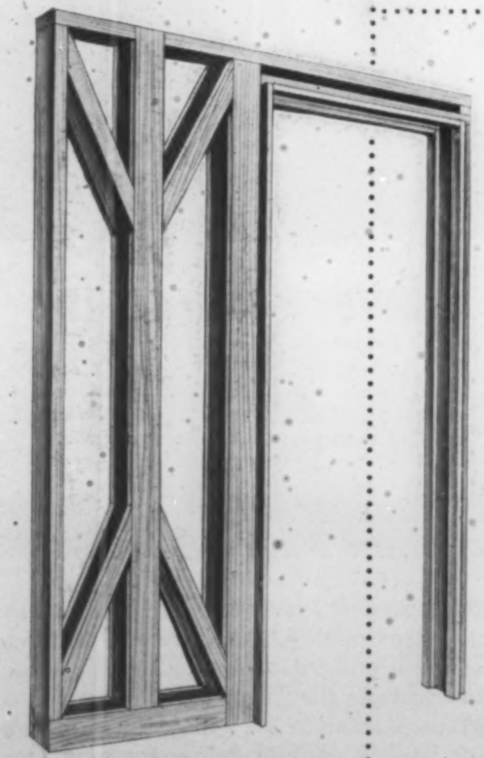
FHA has approved mortgage insurance financing totaling $27,500,000 for the construction of 3010 rental homes by the American Community Builders, Inc. of Chicago. Construction on the 2400-acre site located on the Cook-Will County line between Chicago Heights and Matteson was begun last month and the first houses are expected to be completed early in 1948. The rental development is the first step in the company's plan for a completely new satellite city. It will include 2800 two- and three-bedroom units in multiple family "town and country" houses and twin houses; 200 will be one-bedroom units. Each dwelling will have a full basement and its own front and back yards. A "tot-yard" for each 15–20 homes will be provided. Loebl, Schlossman and Bennett of Chicago are the architects.

Construction is under way on 86 two-family brick veneer houses in the Ivy Hill veteran housing project in Newark, N. J. The 50-acre tract will provide homes for 1000 veterans and their families when completed, plus several stores and a bus terminal. Plans were developed by Arthur H. Padula, vice president of the Fairmount Construction Co., builders of the project.

Construction also has been started on a garden-type apartment project in Astoria, 15 minutes from Times Square, New York City. To be called the Marine Terrace Apartments, it will consist of three main sections, the first housing 405 families, the second 393, and the last 540. Exteriors will be brick; all apartments will have cross ventilation

(Continued on page 128)





More USABLE floor space at LESS COST!

Richards-Wilcox No. 719 Vanishing House Door Hanger and wood lined track installation in ordinary 2 x 4 studded house partition, showing application of hanger and track to header and door.

with R-W Residential Vanishing Door Hangers

Designed for use in 2" x 4" Studded Walls!

Present-day home building costs require maximum use of *all* available floor space. That is why Richards-Wilcox Vanishing (sliding) House Doors are now more popular than ever. Floor space "wasted" due to the swinging arc of hinged doors can be fully utilized with vanishing doors . . . furniture, pictures, lighting fixtures can be located conveniently and correctly.

And with R-W Vanishing House Doors there is no extra construction cost! The R-W "Ordinary Wall" pocket permits installation of vanishing doors in standard 2" x 4" studded partitions. Get complete details from your nearest Richards-Wilcox office—free consultation available without obligation.

(Above) Mill construction of R-W designed "Ordinary Wall" pocket for installing vanishing house doors operating on R-W No. 719 house door hangers in ordinary 2 x 4 studded partition. This construction, developed by Richards-Wilcox engineering department, solves the problem of builders and architects who desire to get the advantages of "Richards-Wilcox" Vanishing House Doors without increasing the width of the ordinary 2 x 4 studded partitions.

1880 RICHARDS WILCOX R-W AURORA 1947

OVER 67 YEARS

Richards-Wilcox Mfg. Co.

"A HANGER FOR ANY DOOR THAT SLIDES"

AURORA, ILLINOIS, U.S.A.

Branches: New York Chicago Boston Philadelphia Cleveland Cincinnati Washington, D.C.
Indianapolis St. Louis New Orleans Des Moines Minneapolis Kansas City
Los Angeles San Francisco Omaha Seattle Detroit Atlanta Pittsburgh

for industrial plumbing

Crane meets every requirement

7-87
Correcto
Urinal
3-460
Rapidway
Closet
C-4669
Telsa
Shower
7-50
Sanitor
Urinal
6-555 Thurstend
Fountain

Shown here are just a few of the many Crane fixtures designed for industry. The broad Crane line meets every plumbing requirement . . . for large plants and small . . . for office and for factory.

Whatever fixtures you select, you can be sure they're built to stand tough usage . . . they're easy to clean . . . they provide proper sanitation. And you can count on this—*the name Crane is better known to your clients than any other name in plumbing.*

For a description of the Crane line now in production, refer to your copy of "Crane Service for Architects." If you are still without one, ask your Crane Branch for a free copy.

CRANE

CRANE CO., GENERAL OFFICES:
836 S. MICHIGAN AVE., CHICAGO 5

PLUMBING AND HEATING
VALVES • FITTINGS • PIPE

NATION-WIDE SERVICE THROUGH BRANCHES, WHOLESALERS, PLUMBING AND HEATING CONTRACTORS

and entrance foyers. Samuel Paul and William M. Dowling are architects for the project, being built by The Roth-Schenker Corp. of New York City.

ATELIER FOUNDED

Under the direct sponsorship of the Newark chapter of the New Jersey Society of Architects, an Atelier has been founded for the purpose of training returning war veterans in architectural drafting and design. Guided by Earnest H. Fougner and other members of the Newark Chapter, who act as critic-instructors, and with the support of Philip H. Haney and Harry C. Stephan of the Essex County Vocational School, the Atelier has progressed during the past 18 months to an enrollment of approximately 30 students in regular attendance. Attendance is limited by the size of present quarters, and a long waiting list has built up. Two of the students already have gained their State Architect's License.

It is the belief of the Newark chapter that this Atelier will become a permanent institution which will definitely be an asset to the architectural profession. To this end, the chapter intends to provide the most efficient tutelage possible by introducing new methods of construction coupled with the latest development in materials, construction methods and design. The chapter recently sponsored a competition to further the work of the Atelier.

ROME FELLOWSHIP

The American Academy in Rome has announced the award of the Rome Prize Fellowships, the first to be given since 1940. Winners in architecture were: Frederic S. Coolidge, of Cambridge, Mass., holder of a B.S. (1940) and a B. Arch. (1946) from Harvard; and Charles D. Wiley of Chicago, who received his B.A. from the University of Minnesota in 1940 and his M.A. from Harvard in 1941, and is currently with the Chicago architectural firm of Skidmore, Owings & Merrill. Miss Ilse Meissner, a graduate of Pratt Institute in 1946, was given honorable mention and named first alternate. Honorable mention also went to William Breger, Harvard, 1945.

The Fellowships are for one year each, beginning October 1, 1947, with a possibility of renewal. The total estimated value of each is about $3000.

Staff in residence at the Academy for the coming academic year will include Laurance P. Roberts, director; Lamont Moore, assistant director; and George Howe, architect.

AT THE COLLEGES

School Accrediting

At its 1947 annual meeting, the National Architectural Accrediting Board took action to the effect that beginning with the publication of the 1949–50 list, no school will be accredited, the completion of whose curriculum involves less than five years of post-high school education. Notice of this action is to be included on the 1947–48 list, and those schools now offering four-year courses are to be so designated.

Eleven of the 16 schools appraised this year had four-year curricula in 1945. Of these 11, five already have five-year curricula in operation, and three more have indicated that they will institute them next year.

Conference Held

A Conference on Community Planning was held at Columbia University, New York City, on June 26 under the joint sponsorship of the University and The Russell Sage Foundation. Purpose was "to clarify and to evoke suggestions from representatives of related fields as

(*Continued on page 130*)

Now available!
"THE ARISTOCRAT OF FLOORS"
Amtico
RUBBER
TILE

architects appreciate

. . . the many advantages of Amtico Rubber Tile. Designed to meet their enacting specifications, Amtico Rubber Tile is the ideal flooring for public and private buildings, where long-lasting beauty and silence are a primary consideration.

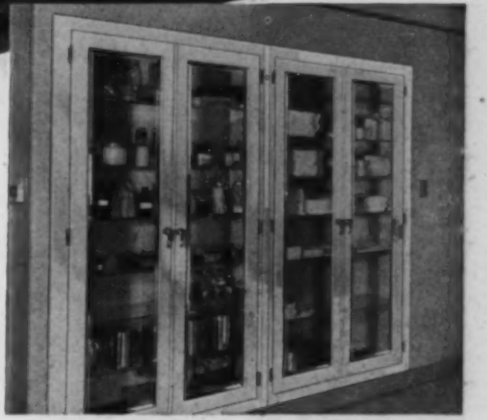
Resistant to cigarettes and other blemishes, it is easy to clean, reducing maintenance costs to a minimum. Banks, airports, hospitals, libraries and streamlined trains offer visible proof of Amtico Rubber Tile's ability to look well under many tramping footfalls.

Thirteen beautiful, marbleized colors make possible many interesting floor designs, and our greatly increased capacity assures prompt delivery. Write for illustrated folder and samples.

AMERICAN TILE & RUBBER CO.
TRENTON, NEW JERSEY

FOR HOSPITALS OF DISTINCTION:

Counter-type storage cabinet in unsterile workroom of Central Service Department. Adjustable stainless steel shelves, metal doors. Stainless steel counter top, back and end splashers.



Recessed supply cabinet in septic operating room

Recessed cabinet in maternity department. Upper section open and fitted with adjustable stainless steel shelves for holding mothers' treatment trays.

SCANLAN-MORRIS

Recessed Cabinets

Authentic Guidance and Assistance
Available to Architects, Without Obligation

• Storage of supplies and materials in the modern hospital is greatly facilitated by the installation of Scanlan-Morris Recessed Cabinets — engineered to fit requirements.

Many years of direct contact with hospital superintendents, surgeons and architects, qualify the Scanlan-Morris Technical Sales Service Department to supply valuable assistance and authentic guidance in such installations—backed by more than 40 years of experience in designing and manufacturing hospital and surgical equipment (not only cabinets but also surgical lights, complete sterilizing equipment and other hospital equipment).

Scanlan-Morris Recessed Cabinets are made in styles and sizes as required to serve the needs of the various hospital departments. Cabinet bodies are made of heavy-gauge steel, with double-lapped and sweated seams, insuring sturdy, dust-proof construction; frames are electrically-welded flat steel; doors and shelves may be of glass or metal, counters and shelves of stainless steel or other metal, as specified.

Mail the coupon for detailed information or submit your problems with floor plans for layout suggestions, without obligation.

Ohio Chemical

MANUFACTURERS OF MEDICAL APPARATUS, GASES AND SUPPLIES FOR THE PROFESSION, HOSPITALS AND RESEARCH LABORATORIES

OHIO

THE OHIO CHEMICAL & MFG. CO.
1400 East Washington Ave., Madison 3, Wisconsin

Represented in Canada by Oxygen Company of Canada, Limited, and Internationally by Airco Export Corporation, 33 West 42nd Street, New York

BRANCH OFFICES IN PRINCIPAL CITIES

THE OHIO CHEMICAL & MFG. CO.
1400 E. Washington Ave., Madison 3, Wis.
Send information on ☐ Scanlan-Morris Recessed Cabinets
(Please attach professional card or letterhead)

Name ....

Address..

City.............................. State.......... AR

THE RECORD REPORTS

(Continued from page 128)

to what and how each field can best contribute to the integration of the respective knowledges leading to good physical planning of the community within this frame of reference."

Hugh R. Pomeroy, Director, Department of Planning, Westchester County, N. Y., served as chairman of the Conference. Speakers were: Dr. Charles S. Johnson, President-elect, Fisk University; Dr. Harold M. Mayer, Chief, Division of Planning Analysis, Philadelphia City Planning Commission; Dr. Edwin H. Spengler, Associate Professor of Economics, Brooklyn College; Le Corbusier, Architect and Town Planner, French Representative, U.N. Board of Design; Albert Mayer, Architect, New York City; and Lewis Mumford, author and critic.

Traphagen prize-winners (left to right): William D. Wilson, second; William L. Bottomley, head of B.A.I.D. panel; Charles E. Stade, first; John K. Sinclair, third

Prizes Announced

Winners of the Traphagen Prizes for an original plan for the first American University of Fashion were: first, Charles E. Stade, Park Ridge, Ill.; second, William D. Wilson, Louisville, Ky.; third, John K. Sinclair, Williamstown, Mass. All three are graduate students in architecture at Princeton University and veterans of World War II. The competition was sponsored by the Beaux-Arts Institute of Design.

A team of four students in the College of Architecture, Cornell University, was awarded first prize in a nationwide competition for the modernization of a shopping center, sponsored jointly by the New York chapter of the A.I.A. and the Store Modernization Show held last month in New York City. The members of the winning team were Blake Allen of White Plains, N. Y., leader; Olaf W. Shelgren, Jr., Buffalo, N. Y.; Miss Alberta J. Cassell, Washington, D. C.; and Eugene M. Bertin, Rochester, N. Y. Their entry consisted of plans and models for the modernization of a group of stores in Ithaca, N. Y.

Review Courses

Refresher and review courses for Architects Registration Examinations will be given at the Federation Technical Institute, 5 Beekman St., New York 7, N. Y., beginning Monday, September 22. The courses offered, all of them evening, are: mechanical equipment of building; electrical and elevators; structural design — steel; structural design — concrete; design and planning; history of architecture; building materials and methods of construction; architectural practice; and preparing for an R.A. exam. For further information address Earl H. Strunk, Director of the Institute, at the above address.

New Bulletin

A new bulletin, "How to Build a House of Concrete or Concrete Masonry," has been published by the Low-Cost Housing Research Engineering Experiment Station of Louisiana State University. Prepared by O. J. Baker, the 8-page illustrated pamphlet gives basic information on concrete masonry, exterior finishes, painting, construction, etc. Copies may be obtained free of

(Continued on page 132)

IMPLEMENT OF ARCHITECTURE

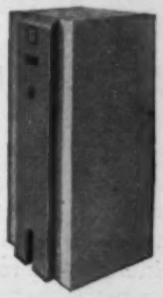
SCHLAGE
STANDARDIZATION

The standardized chassis of Schlage locks permits the boring of all doors at once for economy of installation. Schlage standardization also simplifies the architect's specification job as it allows locks to be reversed or interchanged if plans change during construction.

SCHLAGE
LOCK COMPANY
SAN FRANCISCO • NEW YORK
ORIGINATORS OF THE CYLINDRICAL LOCK

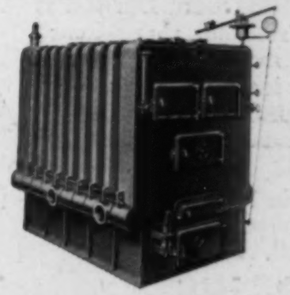
BURNHAM BOILERS SPELL *Dependability and Efficiency* FOR EVERY TYPE OF residential institutional and commercial INSTALLATION

BURNHAM DE LUXE
For Oil Only—Designed for highest efficiency at minimum operating cost. A vertical fire-travel boiler with combustion chamber completely surrounded by water. Heat absorbing fins avoid heat waste.



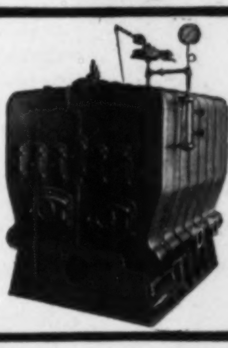
BURNHAM YELLO-JACKET
For Automatic Firing—Oil, Gas, Stoker. Famous for its low-cost operation and dependability. Large combustion space to assure rapid heat absorption. Sections with heat grabbing fins. Built-in heaters for year 'round automatic hot water.

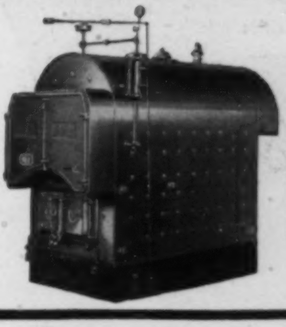
BURNHAM SQUARE SECTIONAL-17"-21"-27" Series
For All Fuels—Designed for medium and large homes and buildings. Tube type construction establishes higher operating efficiencies on hand-fired coal or automatically fired boilers. Famous "three times back and forth fire-travel—the big fuel saver!"



BURNHAM SQUARE SECTIONAL—36"
For All Fuels—A larger version of boiler at left—for large dwellings and buildings. Same extended fire-travel—same fuel saving efficiency—same heat absorbing design. Unjacketed. A popular and highly satisfactory heating unit.

BURNHAM SQUARE SECTIONAL—50" TWIN
For All Fuels—A husky boiler built in twin sections. For apartment houses, hotels and other public buildings. Twin grate assembly. A superior boiler that will deliver maximum heat at lowest cost. 80 inches high overall; 71 inches wide.





BURNHAM WELDED STEEL
(Compact Series)
For Coal, Oil, Gas and Stoker—Famous Burnham extended fire-travel—3 times length of boiler. High boiler efficiency—low flue temperatures. There's no better designed boiler of this type construction. Conforms with ASME Code and SBI Code for low pressure boilers.

Steadily increasing production has placed us in a position to make reasonably prompt deliveries on most styles and sizes. Let us know your requirements.

Burnham Corporation
BOILERS and RADIATORS
IRVINGTON, N. Y., Dept. AR87

I·B·R
INSTITUTE of BOILER and RADIATOR MANUFACTURERS
MEMBER

Burnham
RADIANT HEATING
SINCE 1873

MAIL THIS COUPON TODAY!

Burnham Corporation Dept. AR87
Irvington, New York
I am interested in your ______________
(fill in type here)
Boiler. Please send booklet.
Name ....
Address ....
City .... State ....

(Continued from page 130)

charge from Low-Cost Housing Research, Engineering Experiment Station, Louisiana State University, Baton Rouge 3, La.

Appointments

John Knox Shear, 1938 graduate of the Department of Architecture, Carnegie Institute of Technology, has been named associate professor and assistant head of the Department of Architecture, effective September 1.

T. Keith Glennan, an executive of Ansco Division of General Aniline & Film Corp., and wartime director of the U. S. Navy Underwater Sound Laboratory, has been named president of Case Institute of Technology, Cleveland, Ohio.

Wood Decay Survey

A state-wide study of the factors influencing wood decay, under conditions of modern construction, has been initiated by the New York State College of Forestry at Syracuse University. The study will be under the direction of Dr. Ray R. Hirt, forest pathologist of the College.

The project will include the study of wood decay in year-around dwellings, summer homes, storage plants, office and industrial buildings, etc. The problem of modern wood preservatives in relation to the control of decay in new lumber as well as in timbers already in service, will form an important part of the investigation.

CONTEST

The Philadelphia Art Alliance, sponsor in Philadelphia of the American National Theater and Academy, has announced a model stage set contest with a first prize of $100, a second of $50, and an honorable mention of $10.

Any classic or contemporary play may be chosen for the model set, but the set must be entirely original. Sets must be delivered to the Art Alliance on Sunday, Nov. 16, will be exhibited there through Dec. 7. For further information, address The Art Alliance, 251 S. 18th St., Philadelphia 3, Penn.

PROGRAM FOR COST STABILIZATION

The Governing and Advisory Boards of The Associated General Contractors of America have made the following recommendations to general contractors in an effort to help stabilize construction costs:

"1. Where it is the normal custom of the contractor, and to the fullest extent possible, firm prices should be quoted to the owner. Contractors should require firm prices from subcontractors and sellers of materials and machinery.

"2. Fair and just wages should be paid to workmen, and all possible steps should be taken to encourage workmen to produce a day's work for a day's pay, to maintain wage rates for agreed upon periods of time, to settle disputes without stoppage of work, to eliminate wasteful practices, and to permit the training of adequate numbers of apprentices.

"3. All possible steps should be taken to improve efficiency of management.

"4. Where possible, owners should be discouraged from demanding the completion of projects at speeds which require overtime work at premium rates of pay, or procedures requiring extra costs."

OFFICE NOTES

Offices Opened, Reopened

Jack J. Buchter, Architect, has announced the opening of his office in the Dykes Bldg., 41 Moraga Highway, Orinda Crossroads, Calif., for the general practice of residential and commercial architecture.

(Continued on page 134)

Where **DURIRON** fits into your plans for schools and colleges

If your plans for schools or colleges include chemical laboratories, you can insure against costly, future replacements by specifying Duriron for drain pipe and fittings, sink strainers and traps. Duriron, with its complete indifference to corrosive agents, lasts indefinitely in the chemical laboratory. A high silicon iron, Duriron is uniformly corrosion resistant throughout the thickness of the metal. It possesses structural strength for installation by the usual methods of plumbing practice, being calked in the same manner as cast iron soil pipe.

Write for *new* bulletin 703 which describes Duriron equipment for the laboratory in detail.

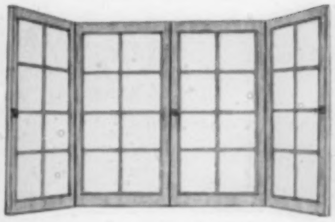
THE DURIRON CO., INC.
DAYTON 1, OHIO
Branch offices in principal cities

CHEMICAL LABORATORY

DURIRON
ACID PROOF
DRAIN PIPE

39-GM

There's No Premium On Light!



Ponderosa Pine casements add warmth and friendliness to modern interiors. These casements are made up in stock designs, with frames, to answer a wide variety of window needs.

Research has proved that stock windows of wood are famous for their efficiency, low maintenance and low cost. Ponderosa Pine windows are easily weather-stripped. They are quiet *windows —permitting minimum vibration. Stock design frames are precision made, properly seasoned and dried, with joints made to stay tight.*

Plenty of outdoor light for the homes you plan need not be costly . . . or impractical . . . when you specify stock design windows of Ponderosa Pine.

You can use these precision-made windows generously, knowing that their clean design and good proportions will add character and friendliness to room interiors—at no cost penalty. Installation costs less because of the wide variety of Ponderosa Pine window types and sizes that fit every kind of construction. Maintenance will be low because smooth-grained Ponderosa Pine holds paint so firmly. Remember, too, that Ponderosa Pine has natural insulating qualities—does not transmit cold or heat, thus helping to keep rooms warmer in winter and cooler in summer.

In planning window groups, bays or corner windows, you'll find "Today's Idea House"—32-page Ponderosa Pine booklet—a valuable aid. This booklet, profusely illustrated with photographs, is yours for the asking. Mail the coupon!

For Friendly Living . . .

Ponderosa Pine

WOODWORK

Ponderosa Pine Woodwork
Dept. PAR-8, 111 West Washington Street
Chicago 2, Illinois

Please send me a free copy of "Today's Idea House."

Name...
(Please Print)

Address...

City...*Zone*........*State*..............

THE RECORD REPORTS *(Continued from page 132)*

Elmer J. Fox, Architect, has announced the opening of his new offices in Consumer's Bldg., 220 S. State St., Chicago 4, Ill.

Ben B. Milam, Lt. Col., C.E., having been relieved from active duty, is resuming the general practice of architecture with offices in the Guaranty Bldg., Galveston, Texas.

The Office of Harold J. Perry, Architect, has been opened at 16 Bloomfield Ave., Flemington, N. J.

New Addresses

The following new addresses have been announced:

Gregory Ain, Architect, Joseph Johnson and Alfred Day Collaborating, 2404 W. 7th St., Los Angeles 5, Calif.

American Houses Inc., 165 W. 46th St., New York 19, N. Y.

Cortland Engineering Co., Structural Engineers, 5 Beekman St., New York 7.

Gordon Drake, Designer, 4201 Sunset Blvd., Los Angeles 27, Calif.

Foster & Yasko, Architects (George Foster and Karel Yasko), 407 Scott St., Wausau, Wis.

P. M. O'Meara Associates (G. J. Maguolo and G. E. Quick, Architect-Engineer), Cincinnati office, 936 Temple Bar Bldg., Cincinnati 2, Ohio.

Frederic Hutchinson Porter, A.I.A., Architect, R. Walter Bradley, Associate, 1009 E. Lincoln Highway, Cheyenne, Wyo.

Simons & Lapham, Architects (Albert Simons, F.A.I.A., and Samuel Lapham, F.A.I.A.), 17 Broad St., Charleston, S. C.

Hugh Stubbins Jr., Architect, 103 Pleasant St., Lexington, Mass.

Firm Changes

Bates & Rogers Construction Corp., 111 W. Washington St., Chicago 2, Ill., has announced that Frederic L. Copeland, vice president, will reopen their western office in the San Francisco area on or about September 1. The firm also has announced the election of the following officers with headquarters in Chicago: John W. Rogers, vice president and treasurer; George N. Martin, vice president; Lee J. Bullen, vice president; and E. J. Million, secretary and assistant treasurer.

Richard M. Bennett, former chairman of the Department of Architecture, Yale University, has been admitted as a partner in the firm of Loebl and Schlossman, Architects-Engineers, 333 N. Michigan Ave., Chicago, Ill., and the name of the firm has been changed to Loebl, Schlossman and Bennett.

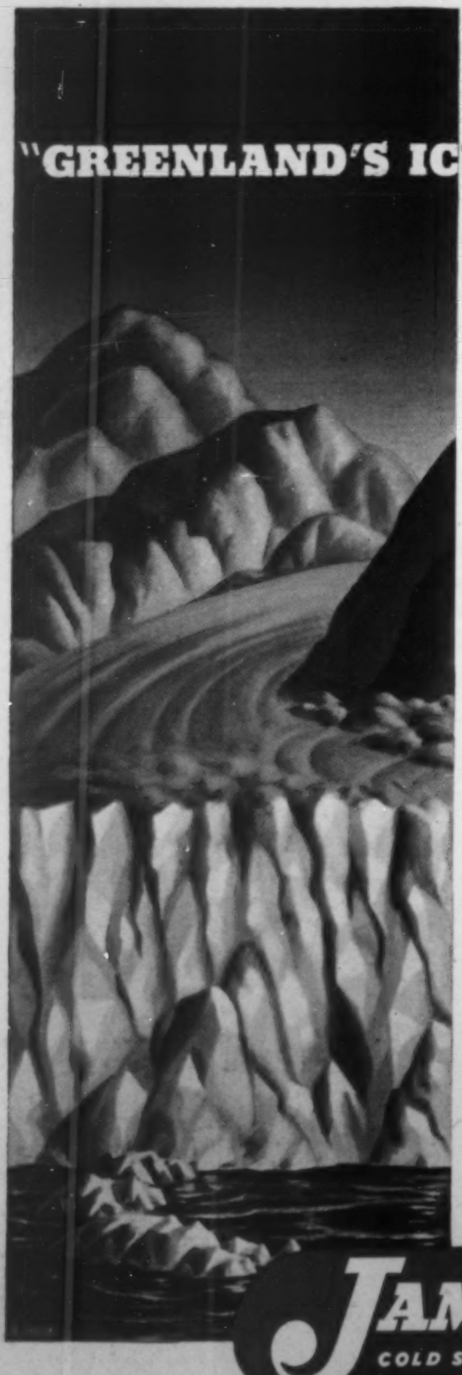
L. W. Cook and R. A. Zern have formed a partnership to be known as Cook and Zern, Consulting Engineers, specializing in the design of structural frames and foundations. Address: 607 Wabash Bldg., Pittsburgh 22, Penn.

Flynn E. Hudson, Jr., A.I.A., and J. Paul Gilmore have announced formation of a partnership for the practice of architecture and engineering under the firm name of Hudson and Gilmore, Architects and Engineers, with offices at 203 Bartlett Bldg., Montgomery, Ala.

Roy E. Lane, A.I.A., has joined the staff of Bozell & Jacobs Advertising Agency in Dallas, Texas, as technical advisor to the agency's clients dealing in building, construction and manufacturing.

CORRECTION

In publishing "Six Ranch Houses for Modern Living" (ARCHITECTURAL RECORD, April, 1947, pp. 82–87), the word "architect" was used erroneously with Cliff May's name. Cliff May is not a registered architect, but a builder of California ranch houses. And the excellent renderings should have been credited to "Chris" Choate, Registered Architect.



"GREENLAND'S ICY MOUNTAINS"

Prodigal Nature has provided Greenland with an unbroken icecap glacier more than 1000 feet thick. The icebergs loosed by its fiords on the North Atlantic would meet the world's refrigerating needs . . . if they could be practically utilized.

As it is, artificial refrigeration must be used. If the openings of refrigerated spaces are not properly sealed, contents are jeopardized and operating costs mount. For nearly half a century, Jamison Cold Storage Doors have satisfactorily solved this problem on thousands of efficient, economically operated installations throughout the civilized world.

The Jamison standard line . . . Jamison, Stevenson, Victor, and NoEqual Doors and related products . . . embraces a wide range of models tailored to most of the requirements of the refrigeration industry. Doors of special design and construction will be built on order. For full information about Jamison Doors for your specific needs . . . and address of nearest branch . . . write Jamison Cold Storage Door Company, Hagerstown, Maryland.

JAMISON
COLD STORAGE DOORS

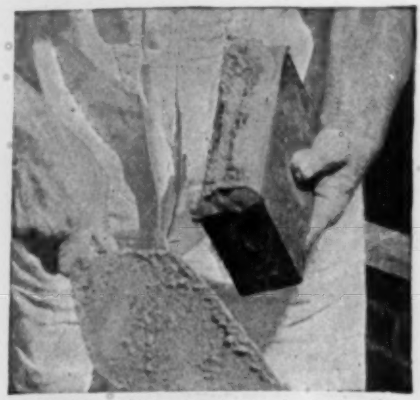
Branches in Principal Cities, Coast to Coast

Get BETTER WORKMANSHIP with BRIXMENT!

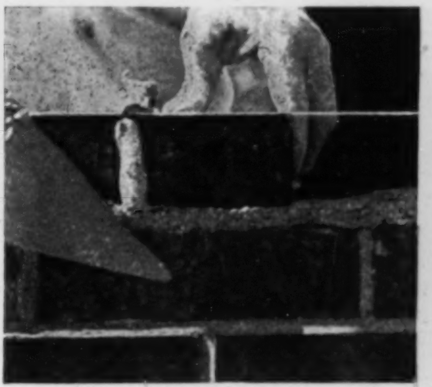
No. 4 OF A SERIES—

THE RIGHT WAY AND THE WRONG WAY—IN HEADER COURSES

To secure full header joints, mortar should be spread over the entire side of the header brick before it is placed in the wall.



Mortar should be spread over the entire side of the header brick before it is placed **on the wall.**



The brick should be shoved into place so mortar oozes out at the top of the joint.

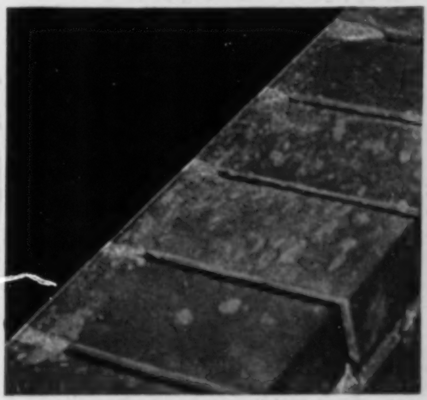
This completely fills the joint.

BRIXMENT is so workable, so plastic, that when the bricklayer pushes the brick into place, he does not have to *force* it home. The excess mortar "flows" readily into every part of the joint, thus providing good, full joints without requiring extra work or effort on the part of the bricklayer.

Aside from its greater plasticity, Brixment mortar has higher water-retaining capacity and bonding quality, greater resistance to freezing and thawing, and freedom from efflorescence. Because of this combination of advantages, Brixment is the leading masonry cement on the market.

A dab of mortar spotted on one corner (or both corners) of the brick cannot possibly fill the cross joint. Slushing will not fill the voids.

When a dab of mortar is spotted on one corner of the brick,



there is very little mortar in the cross joint.

Slushing will not fill the voids.

LOUISVILLE CEMENT CO.
Incorporated
LOUISVILLE, KY.

(Continued from page 122)

pillow during the day. Seat of the sofa bed is covered with a tailored slipcover, which the hotel guest removes to uncover the made-up bed. Model hotel rooms, decorated by James McCutcheon & Co., have been designed for the Roosevelt in New York City; Williamsburg Inn, Williamsburg, Va.; the Radison, Minneapolis; the Utah, Salt Lake City; the Olympic, Seattle; and the St. Francis, San Francisco. James McCutcheon & Co., 609 Fifth Ave., New York, N. Y.

STORAGEWALL

Storagewall units are now obtainable, after being in the design stage for several years, and are on display in a few department stores throughout the country, such as Macy's, in New York. These prefabricated wood cabinet units, originally designed by George Nelson and Henry Wright, permit great freedom in the arrangement of storage space, either along the wall or as a free-standing division between rooms. Every foot of such a wall may serve for storage: the lower sections in various combinations of bookcases, wardrobes, china closets, radio-phonograph cabinets, linen closets, chests of drawers, dressers, and desks; and upper sections for long-term storage. The units measure 12 in., 18 in., and 24 in. deep, and vary as to height and width to fit various room lengths and ceiling heights. They are lacquered in five colors — gray, pale blue, chartreuse, deep green, and black — or available in natural wood finish. Storagewall, Inc., Box 254, Indian Orchard, Springfield, Mass.

Larry Gordon Photo

Prefabricated wall units serve for storage

HEAVY-DUTY ELEVATORS

A new line of industrial elevators has been designed for buildings where trucking imposes unusually severe loading. Today, most industrial trucks are of the pallet-loading type, short-coupled, and with narrow wheelbases, and impose a tremendous amount of twisting and tilting of the elevator car. Often the load is concentrated on less than one fourth of the elevator floor space. The new elevators are of heavier construction and specially engineered for this new type of service. Otis Elevator Co., 260 Eleventh Ave., New York 1, N. Y.

ADJUSTABLE FLOOR DRAIN

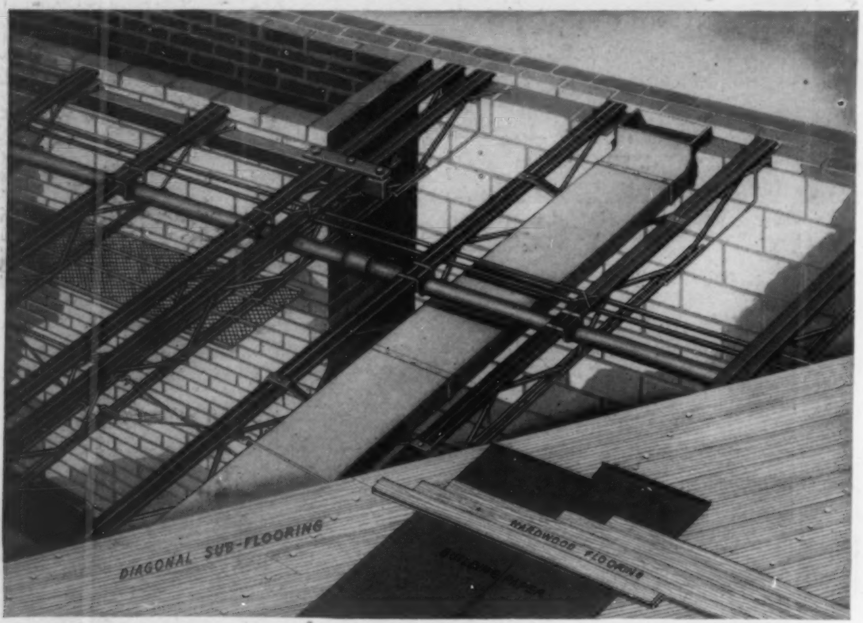
The *Leveleze floor drain* has an adjustable top that can be raised or lowered to compensate for variations in floor level. It is installed with the adjustable top in "neutral" position, which permits the top and grate to be raised or lowered to the proper level when floor construction is set. This feature also is said to expedite repairs to floors without disturbing drain body, drainage lines, or arch. When a new floor finish of considerable height is added, an extension collar can be used. Josam Mfg. Co., Ferguson Bldg., Cleveland, Ohio.

ASPHALT SHINGLES

Marketed under the name of *Duble-Coverage Tite-On* is a new line of asphalt shingles that interlock and overlap so as to provide two thicknesses of shingles over entire roof area. This design is said

(Continued on page 138)

STEEL JOISTS AND STUDS
YOU CAN NAIL INTO LIKE WOOD



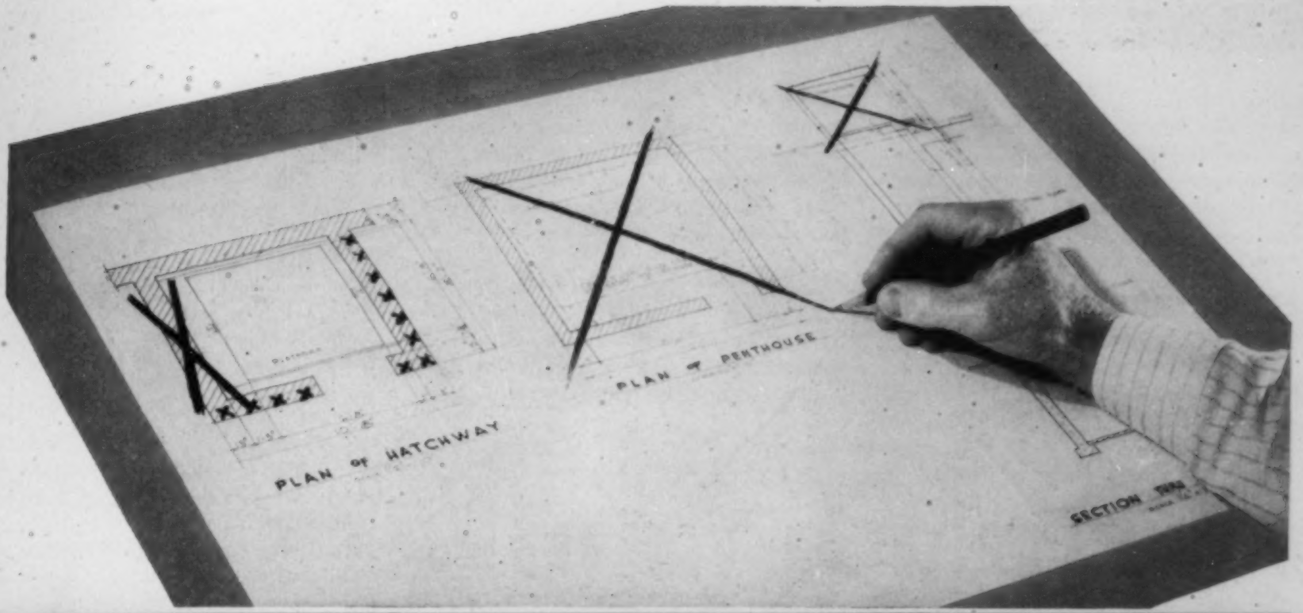
PATENTS PENDING

Builders everywhere have welcomed these improved steel sections. Adding NAILABILITY to the original Macomber Bar Joist now gives designers and builders one steel joist of universal application.

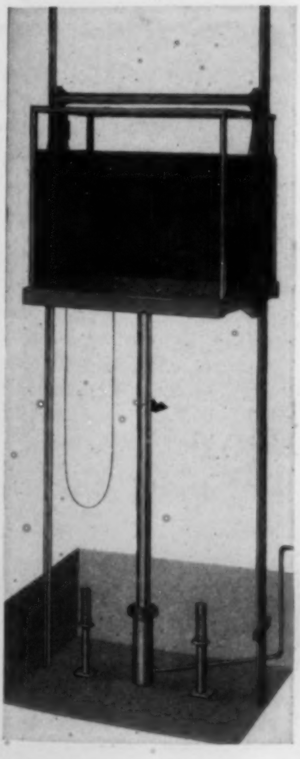
Shown above is the Macomber V-Type Bar Joist in a typical dwelling installation. Flooring is nailed directly to joists. More room is provided for pipe and duct work. Sizes are determined from standard Steel Joist Institute Loading Table. Made in Joist, Purlin and Stud sections.

Further information upon request. See our catalog in Sweet's 1947.

MACOMBER
CANTON • OHIO
MEMBER OF THE STEEL JOIST INSTITUTE



You can "X out" the penthouse and heavy sidewalls!



Elevator That's Pushed Up Cuts Construction Costs and Streamlines Designs

Yes, you can take your pencil and cross off the penthouse and heavy hatchway sidewalls on the plans for that new building . . . by specifying Oildraulic Elevators.

It's Done by Hydraulic Power

This modern elevator reduces load lifting to simple fundamentals. Loads are **pushed up** from the ground hydraulically instead of pulled from above by mechanism which requires the building structure to support the entire weight of the elevator and contents. This eliminates the unsightly penthouse and heavy load-bearing sidewalls. The compact power unit can be located in any convenient space on any landing. Result: lowered construction costs and streamlined building designs.

Accurate Landing Stops

The Oildraulic Elevator is raised by an oil-hydraulic jack, electrically powered. Operation is hydraulically smooth . . . no abrupt starts or stops. Landing stops are very accurate, which is extremely important where power vehicles are to be used in loading and unloading.

For 2, 3 or 4-Stories

Operating cost is low . . . power used only on rise, descent by gravity. Maintenance expense is low, too. Thousands of architects, engineers and owners say that Oildraulic Elevators are the most practical and economical type for rises up to 40 ft.

Send for data to help solve elevator problems →

ROTARY LIFT CO.
1004 Kentucky, Memphis 2, Tenn.
Send Catalog RE-301 (AIA File 33) to:
Name..
Address..
City and State..

Rotary OILDRAULIC ELEVATORS

ROTARY ALSO MAKES OILDRAULIC LEVELATORS • LUMBER LIFTS • AUTO AND TRUCK LIFTS

(Continued from page 136)

to give increased resistance to rain and wind. The shingles are designed for new roof construction, but can also be applied over old roofs. They carry the Class C label of the National Board of Fire Underwriters. The Rubberoid Co., 500 Fifth Ave., New York 18, N. Y.

ROOF VENTILATOR

Ject-O-Valve powered ventilator is a "straight-through" type for roof installation in industrial buildings. A propeller fan exhausts heat, smoke, and fumes through a divided top which opens and closes automatically. The ventilator is manufactured in five sizes with a wide range of capacities. The Swartwout Co., Cleveland, Ohio.

SELF-COOLED FOUNTAIN

A new wall-type drinking fountain has its own *Temprite water cooler* built into the porcelain fixture. In multiple installations, individual fountains can be placed where desired and all operated from a conveniently located condensing unit. Individual cooling eliminates the need for heavily insulated water circulating lines, pump, and motor. Tal-Co Mfg. Co., 510 N. Dearborn St., Chicago.

Wall-type fountain has built-in cooler

WATERPROOFING MEMBRANE

Glasfab waterproofing membrane is an evenly woven mesh made wholly of inorganic glass fibers. These fibers are said to withstand temperatures up to 1000°; are not charred or burned by hot bitumen; and being unaffected by moisture, will not rot or decay. The mesh is designed to be light and flexible so that it will mold itself readily to uneven roof surfaces. The Lexington Supply Co., 4815 Lexington Ave., Cleveland 3, Ohio.

CONDENSATION PROTECTION

Industrial NoDrip is a plastic cork coating that reportedly will keep moisture from forming on metal, concrete, brick, wood, plaster, or composition surfaces when condensation is due to temperature differential. It is supplied in a plaster-like form and applied in thick coats with a trowel, putty knife, brush, spray, or by hand. Aside from combatting moisture, the coating is said to offer advantages of acting as a moisture-proof insulation and protecting metals against corrosion. NoDrip is black but can be painted. One gallon will cover about 6 sq. ft. of surface with a coating ¼ in. thick. J. W. Mortell Co., Kankakee, Ill.

WIRED BASEBOARD

The *Wire-Hiway Base* is an aluminum baseboard designed to provide wiring facilities and to anchor partitions. Outlets can be provided wherever and whenever needed. The base is 3½ in. high, coved at top and bottom. Front panel is removable to make wiring accessible. A foot-operated switch eliminates need for a wall switch. Other models with dual "hiways" are available for industrial plants and office buildings. Charles E. Barnes & Son, 4320–22 Osage Ave., Philadelphia 4, Penn.

(Continued on page 140)

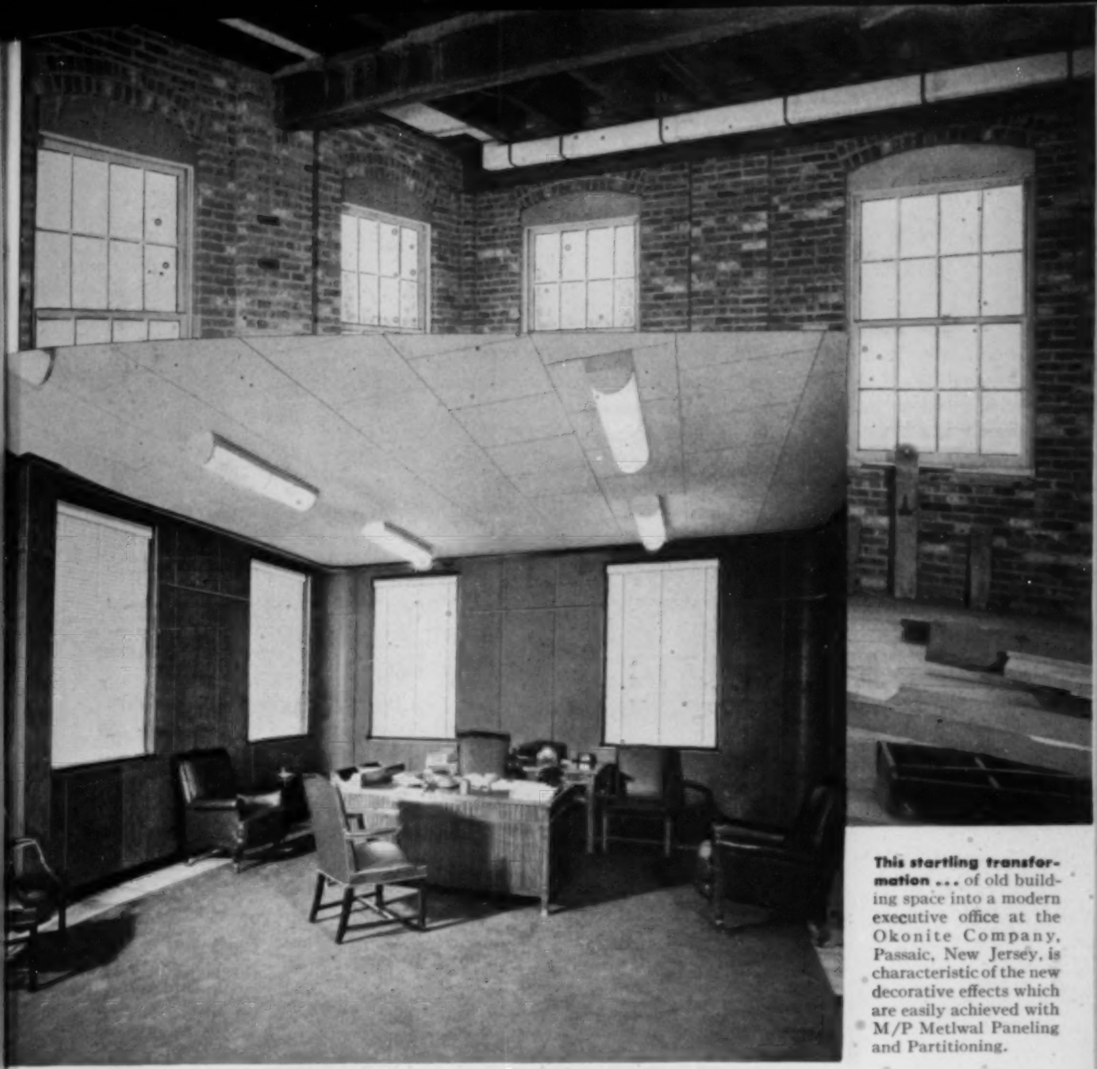
The Public Be Pleased!

plan on Marlite walls

You can design sanitation and cleanliness right into hotel and restaurant rest rooms with plastic-finished Marlite wall and ceiling panels. Plan on Marlite's sparkling clean beauty to complement any architectural treatment, . . and plan, too, on Marlite's economy – it's easy to install and easy to keep clean. Adaptable to new construction or modernization, versatile Marlite is at once attractive and practical. Although production of Marlite is greater than ever before, the tremendous demand makes it necessary to continue allocation of orders for the present. Marsh Wall Products, Inc., 805 Main Street, Dover, Ohio.

FOR CREATING BEAUTIFUL INTERIORS

Marlite
PLASTIC-FINISHED
WALL PANELS



This startling transformation . . . of old building space into a modern executive office at the Okonite Company, Passaic, New Jersey, is characteristic of the new decorative effects which are easily achieved with M/P Metlwal Paneling and Partitioning.

See this 10-minute demonstration. Learn how this modern method of paneling and partitioning fits your building, modernizing or partitioning plans. CALL YOUR NEAREST M/P DISTRIBUTOR TODAY.

YOUR M/P DISTRIBUTOR

ALABAMA	
Birmingham	Acousti Engineering Co.
Mobile	Acoustics & Specialties Co.
ARKANSAS	
Little Rock	Acoustics & Specialties Co.
CALIFORNIA	
Los Angeles	The Harold E. Shugart Co.
Oakland Sacramento San Francisco	F. K. Pinney, Inc.
COLORADO	
Denver	Lauren Burt, Inc.
CONNECTICUT	
Hartford	The C. A. Bader Co.
DELAWARE	
Wilmington	John H. Hampshire, Inc.
Wilmington (Eastern Shore)	The W. M. Moyer Co.
DISTRICT OF COLUMBIA	
Washington	John H. Hampshire, Inc.
FLORIDA	
Jacksonville Miami	Acousti Engineering Co. of Fla.
Pensacola	Acoustics & Specialties Co.
GEORGIA	
Atlanta	Acousti Engineering Co.
ILLINOIS	
Decatur	Hugh J. Baker & Co.
INDIANA	
Evansville Ft. Wayne Indianapolis Wabash	Hugh J. Baker & Co.
KENTUCKY	
Louisville	E. C. Decker & Co.
LOUISIANA	
New Orleans	Acoustics & Specialties Co.
MAINE	
Portland	Pitcher & Co.
MARYLAND	
Baltimore	John H. Hampshire, Inc.
MASSACHUSETTS	
Boston	Pitcher & Co.
Springfield	The C. A. Bader Co., Inc.
MICHIGAN	
Detroit	R. E. Leggette Co.
Grand Rapids	Leggette-Michaels Co.
MINNESOTA	
Minneapolis	Insulation Sales Co., Inc.
MISSOURI	
Kansas City St. Louis	Henges Co., Inc.
NEW JERSEY	
Elizabeth	Jacobson & Co.
Trenton	The W. M. Moyer Co.
NEW MEXICO	
Albuquerque	The Jay Grear Corp.
NEW YORK	
Albany Buffalo Jamestown Rochester Syracuse	Collum Acoustical Co.
New York City	Jacobson & Co.
NORTH CAROLINA	
Charlotte	Acousti Engineering Co. of the Carolinas
OHIO	
Akron Cleveland Columbus Toledo	Mid-West Acoustical & Supply Co.
Cincinnati Dayton	E. C. Decker & Co.
PENNSYLVANIA	
Altoona Pittsburgh Sharon	Harry C. Leezer Co.
Harrisburg Philadelphia Scranton	The W. M. Moyer Co.
RHODE ISLAND	
Providence	Pitcher & Co.
SOUTH CAROLINA	
Charleston	Acoustic Engineering Co. of the Carolinas
SOUTH DAKOTA	
Sioux Falls	Insulation Sales Co., Inc.
TENNESSEE	
Chattanooga Knoxville Nashville	Len Herndon Co.
Memphis	Acoustics & Specialties Co.
TEXAS	
Dallas Houston San Antonio	S. W. Nichols Co.
El Paso	The Jay Grear Corp.
UTAH	
Salt Lake City	Lauren Burt, Inc.
VIRGINIA	
Norfolk Richmond Roanoke	John H. Hampshire, Inc.
WEST VIRGINIA	
Huntington	E. C. Decker & Co.
Clarksburg Wheeling	Harry C. Leezer Co.
WISCONSIN	
Milwaukee	Edw. T. VerHalen, Inc.
WYOMING	
Cheyenne	Lauren Burt Inc.

Looking for a FASTER, EASIER way to get

Distinctive, Permanent Paneling?

ORDINARY buildings and rooms are quickly transformed into smart, distinctive offices by Martin-Parry Metlwals. Using *only a few standard parts from warehouse stock*, M/P Metlwals permit fast, easy installation of permanent paneling . . . eliminate the need for any type of filler board, plaster, or other construction materials. And Metlwal is ideal for new construction, too.

Movable Partitions for Flexible Floor Plans

In outer offices, where efficient use of space may require floor plan changes, Metlwal movable partitions provide a durable, attractive means of dividing space . . . permanent, yet easily moved without waste of time or material.

Factory Finished in Crackproof, Chipproof Enamel

The face sheets of M/P Metlwals are factory finished in natural woodgrain reproductions or in a variety of baked enamel colors. These beautiful finishes will not crack, chip or craze . . . *do not reflect harsh metallic light.* Bonderized against rust and corrosion, Martin-Parry Metlwals meet every paneling and partitioning requirement and assure faster, cleaner, easier installation . . . combine long life, lasting beauty, soundproofing and fire resistance with low initial cost and easy maintenance.

Write today for FREE BOOKLET A8 for your A.I.A. file . . . showing how Metlwals can help you plan and utilize office space more effectively . . . how Metlwals are made and installed . . . along with specifications and photos of actual installations. ADDRESS: Martin-Parry Corporation, Fisher Building, Detroit 2, Michigan. PLANTS: Toledo, Ohio; York, Pa.

MARTIN PARRY
MP
PRODUCTS

METLWALS

ALL-FLUSH PANELING
MOVABLE PARTITIONS

67 Years of Service

ENGINEERING AND ERECTING SERVICE AND WAREHOUSE STOCKS FROM COAST-TO-COAST

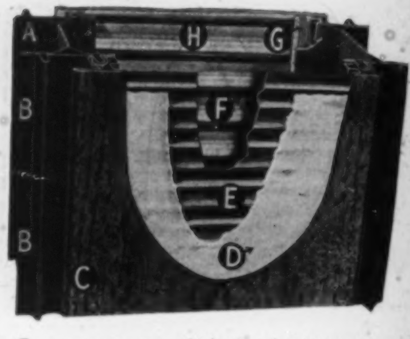
(Continued from page 138)

WALL COVERING

Varlar has been announced as a virtually stainproof wall covering, manufactured by a thermoplastic process employing resins with stainproof, greaseproof, and mildewproof characteristics. According to test reports, practically every type of stain is removed quickly by soap and water; the few exceptions requiring a light wiping with turpentine. Varlar, Inc., Div. of United Wallpaper, Inc., Merchandise Mart, Chicago 54, Ill.

METAL PARTITIONS

The *Metlwal* system of partitioning and paneling features the use of a few standardized parts for simplified installation in industrial and commercial buildings. The basic unit is an asbestos-lined sheet steel panel with corrugated steel backing. Panels are snapped onto steel studs set in floor and ceiling channels, and provide an all-flush surface from floor to ceiling. A partition consists of two panels, 3½ in. apart, leaving space between for pipes and cables. The studs are slotted to receive wiring. Since panels correspond to door sections, doors may be located where desired. The exterior face of the panels is factory-finished in either woodgrain or baked enamel finish. Interchangeable units include standard sections for ceiling and cornice-high partitions, movable steel railings, and such accessories as sliding windows, information windows, vertical or horizontal pivoted sashes, slotted metal bases for air circulation, and standard glass or solid panel doors with louvers and transom. Martin-Parry Corp., Fisher Bldg., Detroit 2, Mich.



Cutaway section of Metlwal: (A) steel studs for partition, (B) snap-on indent, (C) steel panel face, (D) asbestos lining, (E) and (F) corrugated steel backing, (G) panel stiffener, and (H) 3½-in. air space

HOT-AIR HEATING

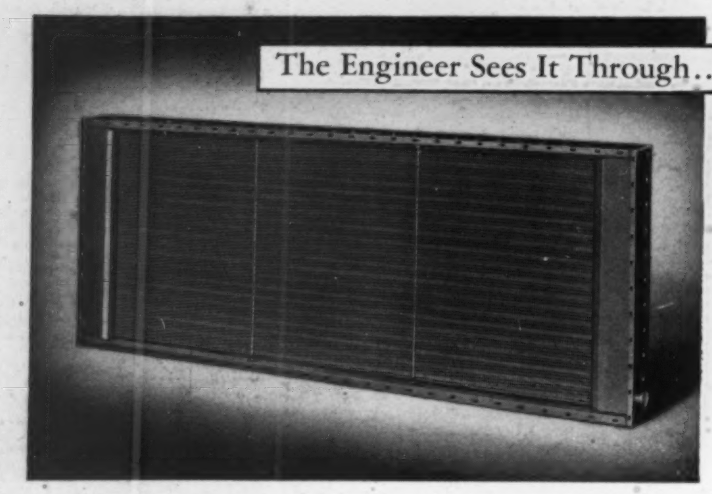
The *R9 oil burning furnace* is designed for location on the same floor level as the rooms to be heated. In this packaged central heating unit, warm air is forced from the bottom of the furnace and return air enters at the top and is forced down over the surface of the combustion drum by a large circulating air blower. Insulated ducts can be run beneath the floor to various rooms, or the warm air can be conducted in clay sewer pipe imbedded in the concrete floor around the perimeter of the house, for additional panel heating effect. Sheet metal work is simplified by the provision of knock-out blanks at sides, front, back, and underneath the furnace. The furnace is equipped with operating controls and a humidifier. International Oil Burner Co., St. Louis 10, Mo.

FOR CLEANER DRAWINGS

Draw-Kleen removes smudges, fingerprints, and dust from drawings and blueprints. It comes in the form of fine soft "crumbles" that are sprinkled on the surface and rubbed with the palm of the hand. It can also be used on drawings to gray down pencil lines in preparation for the final rendering. Draw-Kleen is packaged in a 1½-oz. shaker-top can. The Craftint Mfg. Co., Cleveland, Ohio.

(Continued on page 142)

The Engineer Sees It Through . . . *at* usAIRco



Coils . . . Designed for Every Requirement

The complete line of usAIRco coils includes steam coils for heating, standard and non-freeze type, water coils for heating and cooling and direct expansion coils. These coils are properly designed, skillfully manufactured, and expertly engineered to the job requirement.

The usAIRco engineer follows through from design board through the installation. He specifies that coils are constructed for heavy service and dependability—he sees that you get a mechanically efficient tool. And most important, the usAIRco engineer helps you put the coil to work on your specific job.

Get acquainted with helpful usAIRco engineers on your next air conditioning job.

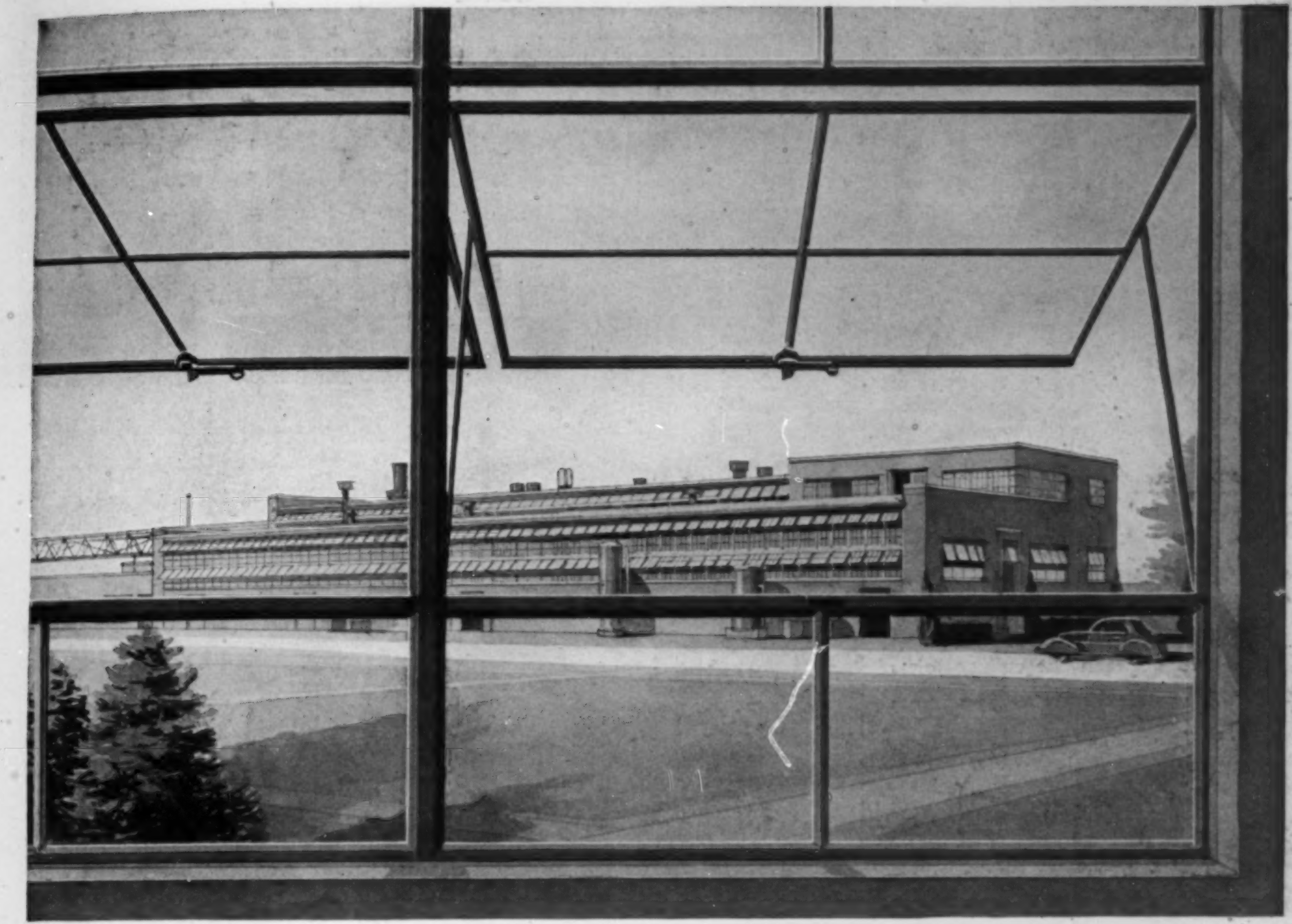
Plus
Cooperative Engineering Counsel

Available to your air conditioning, heating or ventilating problems is the advice and counsel of the engineering staff of usAIRco. With a background of nearly twenty-five years, it is one of the most experienced in the industry. We invite you to use it freely and fully.

UNITED STATES AIR CONDITIONING CORP.
Minneapolis 14, Minnesota
Factory Representatives in Principal Cities

TESTED . . . . AND PROVED

Every coil takes a final plunge before going off to work for you. High pressure is applied to show up weak spots in construction. This test, and others, assure dependable performance on the job.



Recent Lupton Metal Window installation at the research and development laboratories of the Socony Vacuum Oil Company at Paulsboro, N. J. Architect: Frederick G. Frost, N. Y. Contractor: Skinner, Cook and Babcock, N. Y.

Daylighting requirements vary widely from one factory-type building to the next—refinery, manufacturing plant, warehouse or power plant. That is why the Lupton experience in industrial window applications is so important. There are three basic types of Lupton Windows for industrial buildings—continuous windows, pivoted windows and projected windows — each offering positive assurance of improved working conditions and increased working efficiency through abundant daylighting and controlled ventilation. Write for the 1947 Catalog or see our Catalog in Sweet's.

MICHAEL FLYNN MANUFACTURING CO.
700 East Godfrey Avenue Philadelphia 24, Penna.

LUPTON
METAL WINDOWS

"WHERE A FAN BELONGS"

Blo-Fan electric *ceiling* ventilator builds in between the ceiling joists *directly over the kitchen range*—where a fan belongs.

Blo-Fan ducts out smoke, odors and grease-laden air . . . *as they rise . . . before they spread.*

Blo-Fan patented blade provides the *volume* of a propeller with the *power* of a blower.

Blo-Fan is nationally distributed by General Electric Supply Corp. and more than 300 other distributors. Consult Sweet's Catalog, AIA File 30-D-1, or write for complete information.

Blo-Fan

ELECTRIC CEILING VENTILATION

MORE THAN A FAN
MORE THAN A BLOWER

PRYNE & CO., INC.
LOS ANGELES 54, CALIFORNIA
NEW YORK CHICAGO

(*Continued from page 140*)

Screen wall is of textured plywood, on open frames, natural pine finish (house of Alexander H. Girard, Architect)

PLYWOOD PANELING

Weldtex, the plywood panel designed by Donald Deskey, has striations cut into the outer layer of plywood veneer, giving an unusual finish of parallel, random-width lines. It is said to be moisture-resistant for interior installations, and waterproof for exterior use. Textured effects can be varied by alternating the direction of the striations, and the board can be applied to either flat or curved surfaces. U. S. Plywood Corp., 55 W. 44th St., New York 18.

RUBBER TILE

Amtico rubber tile flooring is now available in 13 marbelized colors; announced as particularly suitable for areas where traffic is heavy, and flooring must be long-wearing, easy to clean, and resistant to cigarette burns. American Tile Co., Trenton, N. J.

ANGLE INDICATOR

A carpenter's level and angle indicator has been announced under the name of *Anglevel*. In addition to the usual vials for determining horizontal and vertical levels, there is a dial indicator that determines angles, slopes, and pitches, calibrated in degrees. The frame is of aluminum, weighing only 1 lb. 8 oz. R-D Company, Box 912, Flint, Mich.

WOOD WINDOW UNITS

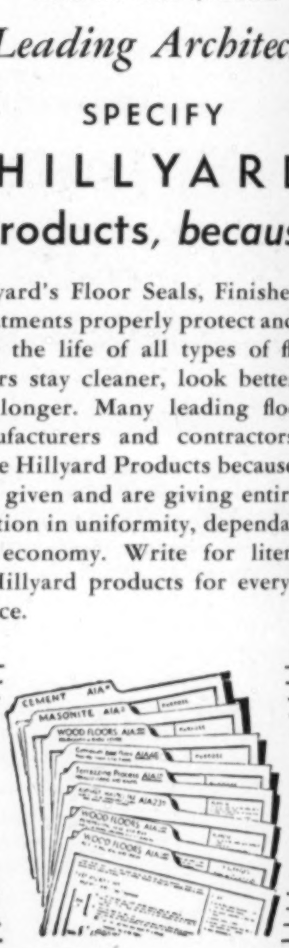
R-O-W removable window units have a narrow frame and mullions to increase glass area to a maximum. The sash rides in spring-cushioned non-corrosive metal tracks, which eliminate the need for weights, cords, and pulleys. Both sash can be removed readily for cleaning or painting; or for increased ventilation of sun porches in hot weather. R-O-W Sales Co., Royal Oak, Mich.

(*Continued on page 144*)

MARCELLUS CENTRAL HIGH
MARCELLUS, N. Y.
Carl W. Clark, A.I.A.

Leading Architects
SPECIFY
HILLYARD
Products, *because*

Hillyard's Floor Seals, Finishes and Treatments properly protect and prolong the life of all types of floors. Floors stay cleaner, look better and last longer. Many leading flooring manufacturers and contractors approve Hillyard Products because they have given and are giving entire satisfaction in uniformity, dependability and economy. Write for literature on Hillyard products for every type surface.



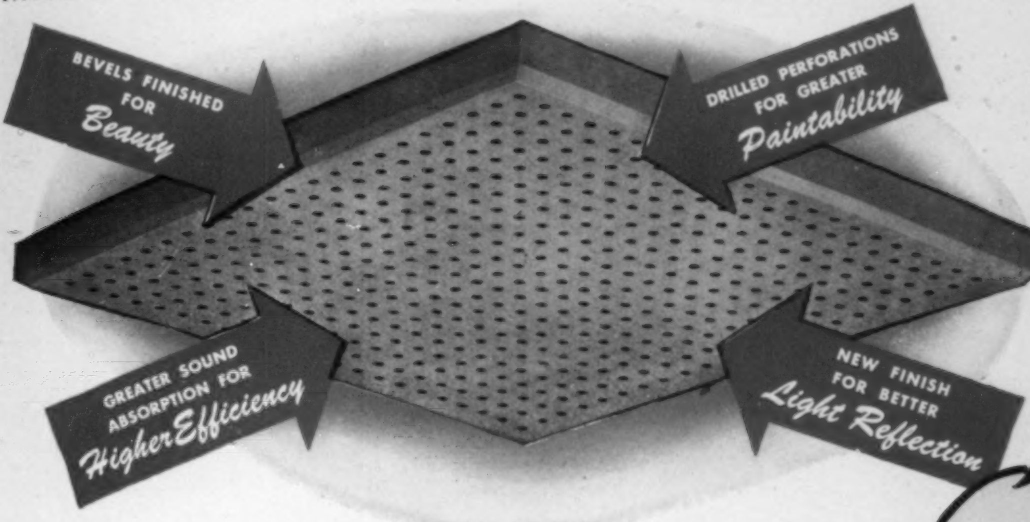
HILLYARD SPECIFICATION CARDS

See Hillyard Specifications in Sweets 1946 Catalog. Sec. 13 Pages 13G-2

Send for Specification Cards. FREE for the asking.

HILLYARD SALES CO's
DISTRIBUTORS
HILLYARD CHEMICAL CO. ST. JOSEPH, MO.
270 TURK ST. SAN FRANCISCO 2, CALIF. 1947 BROADWAY, NEW YORK 23, N. Y.

MADE FROM THE LONG FIBERS OF MATCHLESS DOUGLAS FIR


BEVELS FINISHED FOR *Beauty*
DRILLED PERFORATIONS FOR GREATER *Paintability*
GREATER SOUND ABSORPTION FOR *Higher Efficiency*
NEW FINISH FOR BETTER *Light Reflection*

NO OTHER PERFORATED ACOUSTICAL TILE GIVES ALL THESE ADVANTAGES

for Noise-Quieting and Acoustical Correction

As the result of more than half a century of experience in the wood products field, Simpson "know-how" has developed a new acoustical tile having the advantages long sought by architects and builders. Taking full advantage of the long and tough Douglas fir fiber, Simpson developed a new manufacturing process and new automatic controls guaranteeing uniformly high quality. Result is an improved post-war product . . . an acoustical tile of unparalleled quality . . . of higher sound absorption and designed to give greater ceiling beauty. By an improved process, the 484 perforations per tile unit are *drilled*. Because of the clean drilled perforations, the tile can be painted repeatedly without losing acoustical efficiency. Bevels are finished in the same attractive oyster-white as the tile surface, giving added beauty. Architects will find that noise-quieting and acoustical problems are solved easier with Simpson Acoustical Tile, and installations are much more attractive.

Simpson
QUALITY SINCE 1895

PRODUCTS OF SIMPSON RESEARCH

ACOUSTICAL TILE

WOODFIBER DIVISION • SIMPSON LOGGING COMPANY
Plant at Shelton, Washington • Sales Division, 1010 White Building, Seattle 1, Washington

Also manufacturers of LUMBER • PLYWOOD • DOORS

DISCUSS THIS NEW ACOUSTICAL TILE WITH YOUR NEAREST SIMPSON APPLICATOR

ALLIED CONSTRUCTION & SPECIALTY CO., INC.
8455 Melrose Ave.
Los Angeles 46, Calif.
Phone: Walnut 0541

ANGELES INDUSTRIES
984 McGarry St.
Los Angeles, Calif.
Phone: Vandike 1783

ARIZONA SASH, DOOR & GLASS CO.
657 West St. Mary's Road
Tucson, Ariz.
Phone: 1699

CONSOLIDATED ROOFING & SUPPLY COMPANY
520 South 7th Ave.
Phoenix, Ariz.
Phone: 47888

CONTINENTAL LUMBER CO.
P. O. Box 2042
Boise, Idaho
Phone: 450

ELLIOTT BAY LUMBER CO.
600 W. Spokane St.
Seattle, Wash.
Phone: Elliott 8080

ELLIOTT BAY LUMBER CO.
2712 McDougall St.
Everett, Wash.
Phone: Main 150

EXCHANGE LUMBER & MFG. CO.
P. O. Box 1514
Spokane 7, Wash.
Phone: Glenwood 1621

FROST HARDWOOD LUMBER CO.
327-29 W. Market St.
San Diego, Calif.
Phone: F-7224

LUMBER DEALERS, INC.
1301 Wazee St.
Denver 17, Colo.
Phone: Tabor 6141

LUMBER DEALERS, INC.
108 South Main St.
Pueblo, Colo.
Phone: 4881

LUMBER DEALERS, INC.
423 No. 33rd
Billings, Mont.
Phone: 3911

ROSE CITY FLOOR & INSULATING CO.
Railway Exchange Building
Portland, Ore.
Phone: Atwater 6444

UTAH LUMBER CO.
333 W. 1st So.
Salt Lake City 9, Utah
Phone: 4-4318

No Waiting
WHEN YOU USE
LITH-I-BAR
FIRE SAFE
LIGHT WEIGHT
CONCRETE JOISTS
LITH-I-BAR
GET THIS FREE

IMMEDIATELY AVAILABLE

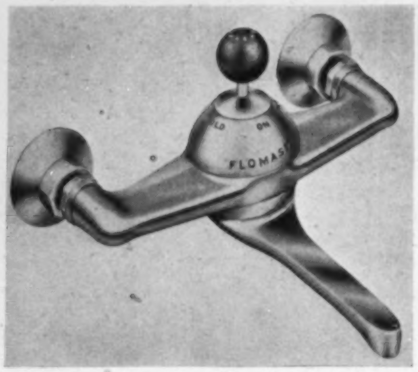
For All Types of Fire-Safe Building. For small homes, apartments, schools, hospitals, or any type of commercial or industrial buildings, the Lith-I-Bar system will provide greater speed, simplicity, minimum in field work, therefore economy.

Lith-I-Bar machine made joist utilizes the exclusive Lith-I-Bar method of electrically welded reinforcing. Wide range of sizes and lengths up to 36 feet.

Wire, write or call today for location of your nearest licensed manufacturer.

LITH-I-BAR CO.
BOX 810R HOLLAND, MICH.

(Continued from page 142)



Swivel-type lever on kitchen faucet controls both water volume and temperature

SINGLE-CONTROL FAUCET

A new type of faucet for kitchen sinks, known as the *Flow-Master*, has only a single control, operating on the spherical valve principle. Both water temperature and volume are regulated by moving the lever from left to right and back to front. Full left gives cold water only, and right, hot water, with varying mixtures between. Moving the same lever from back to front varies the volume from closed to fully open. Metal parts are chrome-plated brass, and the lever knob is colored plastic. The Lorena Co., Dept. AR, 11917 Vose St., N. Hollywood, Calif.

STAINLESS STEEL AWNING

The stainless steel *Lifetime awning*, trimmed in a choice of colors, is announced as particularly suitable for commercial use where appearance counts. Stainless steel construction makes it fireproof and resistant to acid fumes, salt spray, and severe climatic conditions. Header strip is permanently anchored and caulked to the building. Perma-Steel Corp., 2025 Fenkell Ave., Detroit.

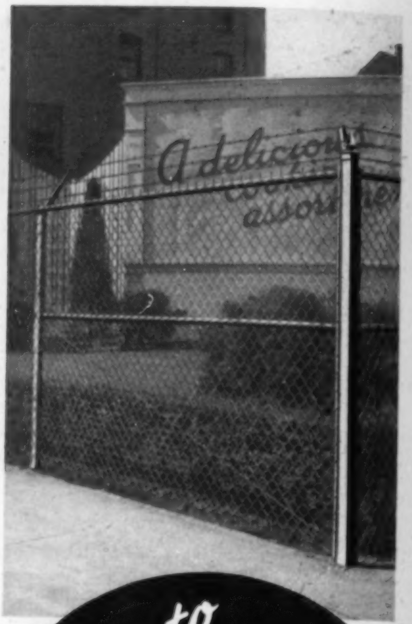
WORK TABLE

The *Work-Flow table* is adjustable to enable industrial operators to work at the most comfortable level, whether standing or sitting. Tables are mounted on gliders for easy movement about the plant and adjustable from heights of 26½ in. to 37 in. by means of a hand crank. Standard table top size is 48 in. long by 30 in. wide, and made of tempered Masonite. Body and frame are of heavy-duty plywood, designed to hold a working load of up to 300 lb. Haskell Mfg. Co., 207 Penn Ave., Pittsburgh.

PAINT BRUSH CLEANER

Keepkan is a packaged unit for cleaning paint brushes before paint hardens; and consists of a solvent in a container

(Continued on page 146)



How to ASSURE YOUR CLIENTS LASTING FENCE PROTECTION

THE fence you specify gives maximum protection only so long as it maintains correct position. That's why Anchor Chain Link Fence is designed to stand *permanently* erect and in line. *Deep-Driven Anchors* do this job! They form a three-point, "tree root" anchorage for every post—hold the fence firm in any soil or weather—yet permit easy relocation where necessary.

What's more, when you specify Anchor Fence you get several other features which mean extra years of top-notch service. There are *Square Frame Gates*, free from warping and sagging—*U-Bar Line Posts*, rust-free, rigid and self-draining—*Square Terminal Posts*, which improve strength, durability and appearance.

Send for your free copy of our book, "Anchor Protective Fences," for your A.I.A. File 14-K. It's both a catalog and specification manual. Shows many types and uses of Anchor Chain Link Fence . . . pictures installations for many prominent companies and institutions . . . contains structural diagrams and specification tables. Just ask for Book No. 110. Address: ANCHOR POST FENCE DIV., Anchor Post Products, Inc., 6600 Eastern Ave., Baltimore 24, Maryland.

Anchor Fence
Nation-wide Sales and Erecting Service

Enjoy Better Living
with Radiant Sunny Warmth
40 FACTS ABOUT MODERN RADIANT HEATING

How to Sell Comfort Heating, in Two Easy Lessons

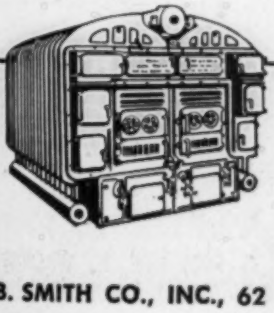
The story of radiant heating is presented colorfully and convincingly in these two new booklets, aimed to help you advise clients on this modern method of home heating . . . and to give home planners *all* the facts about comfort heating.

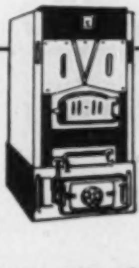
1. *Enjoy Better Living* is sponsored by The Institute of Boiler and Radiator Manufacturers through a national advertising campaign. Order your copies from the Institute at 60 East 42nd Street, New York City, Dept. SS.

2. 40 *Facts About Modern Radiant Heating* is a non-technical, easy-to-read H. B. Smith booklet featuring the outstanding advantages of radiant heating in *all* its forms. It, too, is being advertised nationally. Write to the H. B. Smith Co., Inc. for copies.

* * * * *

You can increase client confidence and stimulate their interest in modern home building by giving them copies of these books. Write to the I-B-R and to H. B. Smith for full information on this unique service, *now.*





H.B. Smith

CAST-IRON BOILERS

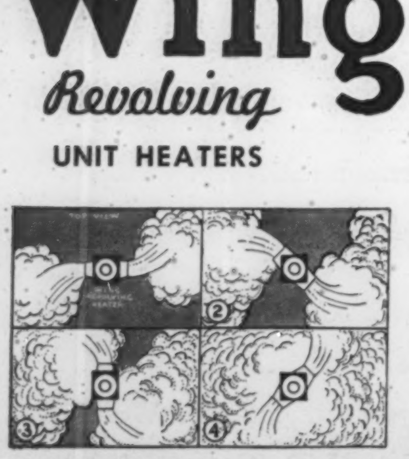
THE H. B. SMITH CO., INC., 62 Main Street, Westfield, Mass. Offices and Representatives in Principal Cities

WING
Revolving
HEATER

Revolving Unit Heaters Insure Complete, Thorough Coverage Regardless of Obstructions ★ ★ ★

Not just another unit heater, the WING REVOLVING HEATER is unique in that it does what no other heater can do — its slowly revolving outlets gently distribute the heat continuously in a constantly changing direction. It reaches over, around and under obstructions into out-of-the-way corners, its moving streams of heated air quickly warm up a plant in the morning. Its properly warmed, healthful air currents thoroughly distributed, create a sensation of live, invigorating comfort for the workers. Wing Revolving Unit Heaters are used in many of the country's leading industrial plants. Write for a list of installations.

Wing
Revolving
UNIT HEATERS



1. Heater starts. 2. 15 seconds later, 45° revolution. 3. 30 seconds later, 90°. 4. 45 seconds later, 135° revolution.

Wing Revolving Unit Heaters keep the heated air moving, circulating around obstacles, seeking out far corners, spreading an even, uniform, healthfully invigorating blanket of warm air over the entire working area.

Write for Bulletin HR-5

L. J. Wing Mfg. Co.

151 W. 14th ST., NEW YORK 11, N. Y.
Factories in Newark, N. J. and Montreal, Canada

(Continued from page 144)

equipped with a brush holder. Wet brushes are suspended in the liquid which reportedly draws off all pigment from the bristles safely and quickly. The solvent may be used over and over, and for the simultaneous cleaning of brushes used for different colors. The Howe Co., 94 Leete's Island Rd., Stony Creek, Conn.

SHOWER FLOOR

A non-slip floor is featured in the *Adapto receptor* for built-in shower stalls. The receptor is of one-piece construction, made of porcelain enamel on steel, with a patterned safety tread. Delivery will be made shortly in two sizes — 32 in. square and 34 in. square: later a 36 in. size will be available for corner-entrance stalls. Bathe-Rite Div., Milwaukee Stamping Co., 824 72nd St., Milwaukee 14, Wis.

GLASS JALOUSIE

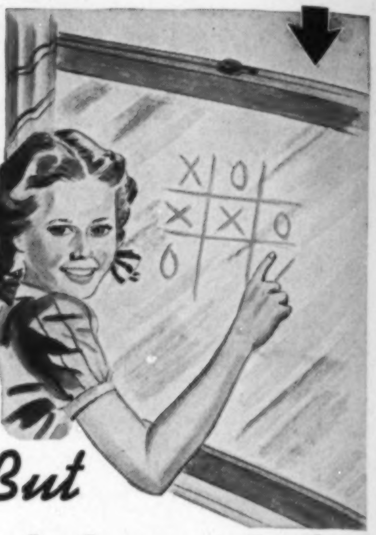
A glass type of jalousie window, known as the *Pro-Tect-U Venetian Window*, has been developed for houses in southern regions. Louvers are of plate glass, 4½ in. wide and hinged on 4-in. centers, that can be opened or closed to control ventilation by means of a brass rod and pinion gear operator. When fully open, 90 per cent of the window area is open to air currents. It is not necessary to close the window during ordinary rains as each projecting vane acts as a miniature awning. When closed and locked in place they serve as protection against heavy rainstorms. The supporting frame with mechanism is installed during construction and the glass vanes after completion of plastering and stuccoing. A removable screen frame is provided. Maximum width of each unit is 3 ft., but it may be any height. Stock sizes correspond approximately to standard double steel casement sash. Pro-Tect-U Jalousie Corp., 2763 S.W. 10th St., Miami 35, Fla.

ATTIC FAN

A newly announced air changer, primarily for attic installation, features aluminum construction and quiet operation. The unit creates a circulation of air through the house, drawing in air through open windows and expelling it from a grille in the attic or other location. Paddle wheel blades of the unit are acoustically treated and moving parts are "floated" in rubber. The 36-in. air changer is powered by a ½-hp motor and is said to cost about 1½ cents an hour to operate. Eagle-Picher Sales Co., Cincinnati, Ohio.

(Continued on page 148)

VAPOR Condensation Child's Play Here



But

A 4-way Evil Within Walls

Moisture condensation on windows may be "child's play," but it can cause these costly evils within walls:

1. **Soggy, inefficient insulation**
2. **wall staining**
3. **paint peeling**
4. **structure rot**

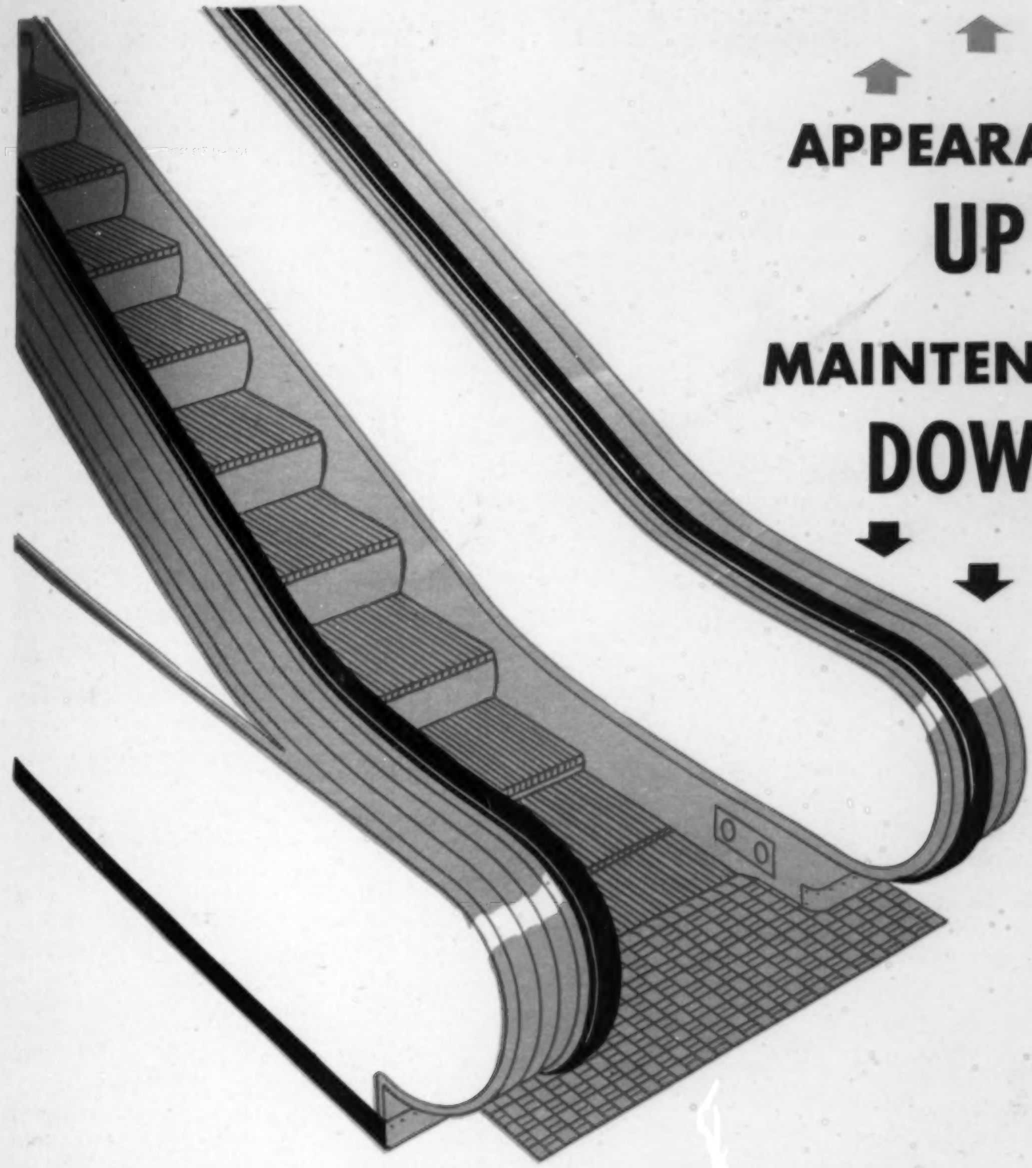
A sure way to lick this 4-way evil of "in-wall" condensation is with a separate vapor barrier. Standard with architects everywhere is Bird Neponset Black Vapor Barrier. Applied on the warm side of insulation, Bird Neponset Black repels vapor, keeps insulation at peak efficiency, ends the other "in-wall" evils. Low cost — only about $20 to protect a $10,000 building. See Sweet's Architectural file, 9b-2. For sample, write Bird & Son, inc., 177 Wash. St., East Walpole, Mass.

VAPOR BARRIER
BIRD NEPONSET PRODUCTS
OUTSIDE OF WALL
COLD SIDE
INSIDE OF WALL
WARM SIDE
SHEATHING
STUD

Specifications: roll width: 36"; Sq. feet: 500; approximate wt.: 50 lbs. Asphalt Saturated. Coated both sides with glossy asphalt surface. Meets Federal Specifications UU-P-536 Grade B.

BIRD NEPONSET BLACK VAPOR BARRIER

BIRD & SON Inc., E. WALPOLE, MASS.
CHICAGO NEW YORK SHREVEPORT



APPEARANCE UP

MAINTENANCE DOWN

WITH ALCOA ALUMINUM!

Used for decorative effect, the smooth, gleaming finish of Alcoa Aluminum blends perfectly with modern design. But there is more than good appearance to recommend the use of Alcoa Aluminum for building interiors or exteriors.

To the building operator it brings freedom from maintenance troubles. Aluminum can't rust, warp or chip. It does not require painting. With patented Alumilite* finish, Alcoa Aluminum retains its good looks after long exposure to weather and wear. Its soft, satin-like surface does not readily show finger marks or smudges.

Wherever your plans call for good appearance with a minimum of maintenance, consider Alcoa Aluminum. Alcoa has co-operated with architects on many design and engineering problems. We will be glad to work with you. For information on any application of aluminum, write to ALUMINUM COMPANY OF AMERICA, 1867 Gulf Bldg., Pittsburgh 19, Pennsylvania. Sales offices in leading cities.

*Reg. U. S. Pat. Off.

MORE people want MORE aluminum for MORE uses than ever

ALCOA FIRST IN ALUMINUM

IN EVERY COMMERCIAL FORM